THE

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

VOL. IV. DECEMBER, 1849. No. 6.

"MOVABLE property, or capital, may procure a man all the advantages of wealth; but PROPERTY IN LAND gives him much more than this. It gives him a place in the domain of the world; it unites his life to the life which animates all creation. Money is an instrument by which man can procure the satisfaction of his wants and his wishes. Landed property is the establishment of man as sovereign in the midst of nature. It satisfies not only his wants and his desires, but tastes deeply implanted in his nature. For his family, it creates that domestic country called *home*, with all the loving sympathies and all the future hopes and projects which people it. And whilst property in land is more consonant than any other to the nature of man, it also affords a field of activity the most favorable to his moral development, the most suited to inspire a just sentiment of his nature and his powers. In almost all the other trades and professions, whether commercial or scientific, success appears to depend solely on himself—on his talents, address, prudence and vigilance. In agricultural life, man is constantly in the presence of God, and of his power. Activity, talents, prudence and vigilance are as necessary here as elsewhere to the success of his labors; but they are evidently no less insufficient than they are necessary. It is God who rules the seasons and the temperature, the sun and the rain, and all those phenomena of nature which determine the success or the failure of the labors of man on the soil which he cultivates. There is no pride which can resist this dependence, no address which can escape it. Nor is it only a sentiment of humanity, as to his power over his own destiny, which is thus inculcated upon man; he learns also tranquility and patience. He cannot flatter himself that the most ingenious inventions, or the most restless activity, will secure his success; when he has done all that depends upon himself for the cultivation and fertilization of the soil, he must wait with resignation. The more profoundly we examine the situation in which man is placed, by the possession and cultivation of the soil, the more do we discover how rich it is in salutary lessons to his reason, and benign influences on his character. Men do not analyze these facts; but they have an instinctive sentiment of them, which powerfully contributes to the peculiar respect in which they hold property in land, and to the preponderance which that kind of property enjoys over every other. This

preponderance is a natural, legitimate and salutary fact, which, especially in a great country, society at large has a strong interest in recognising and respecting."

We have quoted this sound and excellent exposé, of the importance and dignity of the landed interest, from a late pamphlet by a great continental statesman, only to draw the attention of our agricultural class to their position in all countries—whether monarchical or republican—and especially to the fact, that upon the intelligence and prosperity of the owners of the soil, here, depends largely the strength and security of our government, and the well working of most of its best institutions.

Where, then, must we look for the explanation of the fact, that in every country the cultivators of the soil are the last to avail themselves of the advantages of skill and science? That everywhere they are the last to demand of government a share of those benefits which are continually heaped upon less important, but more sagacious and more clamorous branches of the body politic?

Is it because, obliged to trust largely to nature and Providence, they are less active in seizing the advantages of education than those whose intellect, or whose inventive powers, are daily tasked for their support, and who cultivate their powers of mind in order to live by their exercise?

These are pertinent questions at this moment; for it is evident that we are on the eve of a great change in the future position and influence of the agricultural class in this country. The giant that tills the soil is gradually wakening into conscious activity; he perceives his own resources; he begins to feel that upon his shoulders rests the state; that from his labor comes the material forces that feed the national strength; that from his loins are largely drawn the strong men that give force and stability to great impulses and sound institutions in republican America.

Is it to be supposed that, with this newly awakening consciousness of the meaning and value of his life, the farmer—the owner of the soil in America—is not to seize any advantages to develop his best faculties? Does any thinking man believe that such a class will continue to plough and delve in an ignorant routine, in an age when men force steam to almost annihilate space and lightning to outrun time?

And this brings us at once to the great topic of the day, with the farmer—AGRICULTURAL SCHOOLS.

Now, that it is confidently believed that we are to have a great agricultural school in the state of New-York—a school which will probably be the prototype of many in the other states—some diversity of opinion exists as to the character of that school.

"Let it be a school for practical farming—a school in which farmers' sons shall be taught how to plough and mow, and 'make both ends meet,' and show farmers how they can make money," says one.

"Give us a school in which the science of agriculture shall be taught, where the farmer's son shall be made a good chemist, a good mathematician, a good naturalist,—yes, and even taught Greek and Latin, etc., so that he shall be as well educated as any gentleman's son," says a second.

"A farm school ought to support itself, or it is worth nothing," says a third.

"It should be liberally endowed by the state, so as to secure the best talent in the country, or it will be the nest of charlatans," says a fourth.

"It should be a model farm, where only the best practice and the most profitable modes of cultivation should be seen," says a fifth.

"It should be an experimental farm, where all the new theories could be tested, in order to find out what is of real value," says a sixth.

And thus, there is no end to the variety of projects for an agricultural school,—each man building on a different platform.

Yet there must be some real and solid foundation on which to erect the edifice of a great educational institution for farmers. And we imagine these supposed differences of opinion may all be reconciled, if we examine a little the sources from which they originate.

Agriculture is both a science and an art. It may be studied in the closet, the laboratory, the lecture room; so that a man may have a perfect knowledge of it in his head, and yet not know how to perform well a single one of its labors in the field; or it may be gained by rote in the fields, by one who cannot give you the reason for the operation of a single law of nature which it involves. The first is mere theory—the second, mere practice.

It is easy to see, that he who is only a theorist is no more likely to raise good crops profitably, than a theoretical swimmer is to cross the Hellespont like Leander; and that the mere practical farmer is as little likely to improve on what he has learned by imitation, as his horse is to invent a new mode of locomotion.

The difference of opinion, regarding the nature or the province of an agricultural school, seems mainly to grow out of the different sides from which the matter is viewed—whether the advocate favors science or practice most,—forgetting that the well educated agriculturist should combine in himself both the science and the art which he professes.

The difference between *knowledge* and *wisdom* is nowhere better illustrated than in a mixed study, like agriculture. Knowledge may be either theoretical or practical; but wisdom is "*knowledge put in action.*" What the agricultural school, which this age and country now demands, must do to satisfy us, is to teach—not alone the knowledge of the books—not alone the practice of the fields, but that *agricultural wisdom* which involves both, and which can never be attained without a large development of the powers of the pupil in both directions. His head and hands must work together. He must try all things that promise well, and know the reason of his failure as well as his success. To this end, he must not be in the hands of quack chemists and quack physiologists in the lecture halls, or those of chimerical farmers or dull teamsters in the fields. Hence, the state must insist upon having, for teachers, only the ablest men; men who will teach wisely, whether it be chemistry or ploughing,—teach it in the best and most thorough manner, so that it may become wisdom for the pupil. Such men are always successful in their own sphere and calling, and can no more be had for the asking than one can have the sun and stars. They must be sought for and carried off by violence, and made to understand that the state has a noble work for them, which she means to have rightly and well done.

To achieve this, an agricultural school must be planned, neither with a lavish nor a niggardly spirit. As agriculture is especially an industrial art, the manual labor practice of that art should be an inevitable part of the education and discipline of the pupils. But to base the operation of the school upon the plan of immediate profit, in all its branches, solely, would, we conceive, cut off in a great degree the largest source of profit to the country at large.

The pupils would leave the school either as practical farmers after a single model, or they would leave it with their heads full of unsatisfied longings after theories which they had not been permitted to work out. They would be destitute of that *wisdom* which comes only from knowledge and experience combined, and would go home only to fail in applying a practice suited to a different soil from their own, or to indulge (at large personal loss,) theories which might have been forever settled in company with an hundred others, at the smallest possible cost to the state.

We rejoice to see the awakened zeal of the farmers of the state of New-York, in this subject of agricultural education. We rejoice to find a large majority of our legislature warmly seconding and supporting their wishes; and most of all, we rejoice to see a governor who unceasingly urges upon our law-makers the value and necessity of a great agricultural school. One of our contemporaries—the editor of the *Working Farmer*—has aptly remarked that WASHINGTON was our only great statesman who had "the moral courage to advocate the rights of farmers. Statesmen mistake the more apparent praise of other classes for the praise of the majority." If, however, the views of HAMILTON FISH, regarding this subject, are carried out by the legislature of this state, the people will owe him a great debt of gratitude, for urging the formation of an educational institution, which will, both directly and indirectly, do more to elevate the character of the great industrial class of the nation, and develop the agricultural wealth of the country at large, than any step which has been taken since the foundation of the republic.

An agricultural college, for the complete education of farmers, where the *wisest general economy of farming*, involving all its main scientific and practical details, successfully established in the state of New-York, will be the model and type of a similar institution in every state in the Union. Its influence will be speedily felt in all parts of the country; and it is therefore of no little importance that the plan adopted by the legislature should be one worthy of the object in view, and the ripeness of the times.

Above all, when a good plan is adopted, let it not be rendered of little value by being entrusted for execution to the hands of those who stand ready to devour the loaves and fishes of state patronage. It is easy to devise, but it is hard to execute wisely; and we warn the farmers in our legislature, the State Agricultural Society, (which has already done such earnest service in this good cause,) and the Executive to guard against a failure in a great and wise scheme, by entrusting its execution, to any but those whose competence to the task is beyond the shadow of a doubt.

NOTES ON THE EVERGREEN IVY.

BY J. JAY SMITH, PHILADELPHIA.

IT has always appeared unaccountable, that the evergreen ivy should be so much neglected as it is in America. In the time of Kalm, he found only one plant, which was trained against a house, during the whole of his travels in this country; and to this day it is entirely too rare. It is extremely ornamental, readily propagated, and produces effects that no other plant can do. A whole ugly village might be changed in

its appearance by a plentiful planting of evergreen ivy. But to make our essay on this, our favorite climber, more complete, let us begin at the beginning,—taking some of our facts from writers who have anticipated us.

The hardy sorts are evergreen shrubs, climbing by the clasping roots produced by their stems; but there are a number of species considered at present to be of this genus, natives of warm climates, growing to the height of from 15 to 20 feet, without support. It is naturally a rooting climber; but when these roots are opposed by a hard substance which they cannot penetrate, they dilate and attach themselves to it, by close pressure on the rough particles of its surface. On very smooth surfaces, such as that of a house or wall that has been stuccoed, or smoothly plastered, no dilatation of the fibril is sufficient to cause the ivy to adhere firmly; and hence, in such situations it always falls down, either when rendered heavy by snow, or when acted on by wind. In some cases we have known, young plants required to be steadied in order to make a commencement; and in such circumstances we have found it advantageous to nail a little cloth beneath, and attach the ivy to it by a small nailed strap. In instances where it refuses to cling after this attempt, trellis work ought to be fixed, or the main shoots may be nailed, like those of a wall tree. When ivy trails on the ground, it roots into it and grows vigorously, but rarely flowers, and is then called barren, or creeping ivy. When it climbs up trees, or in any situation where it is much shaded, it seldom, if ever flowers, until it has grown so high as to be subject to the direct influence of the sun. On walls fully exposed to the light, it flowers abundantly. Whatever support it may have, when it has reached the summit, the branches shorten and become woody, forming themselves into large, shrubby, bushy heads; and the leaves become entire, taking more of an oval shape, and no longer being lobed, like the lower ones. It now flowers freely, when other flowers are scarce; and being odoriferous, and containing a good deal of honey, they are much frequented by bees, which extract a valuable support from them. The berries increase in size during the winter, and the plant itself may be observed to shoot vigorously during the cold weather.

The common ivy will grow to the tops of trees nearly 100 feet in height; but it is said to be doubtful whether the Irish variety will attain the same elevation, though it grows with much greater vigor when young. Rooted plants, placed in good soil, have grown in our neighborhood four and five feet in one year. Against the warm walls of a dwelling-house, having chimney flues in it, it continues its rapid ascent, and is for such places, and indeed for all immediate effects, much the most desirable kind.

The duration of the ivy is very great. Some of the plants against ruined castles and abbeys, which we have seen abroad, are, no doubt, two or three centuries old. Those on Kenilworth towers, and in some places in Ireland, have shot up solid tree-like branches far above the top; and some of them there, having lived their allotted span, leave the appearance of a flag-staff standing up from "the embattled wall." There is a golden-leaved variety, not yet cultivated among us, appearing in spring, after it has made its new leaves, like an immense mass of yellow flowers.

Trained to a pole, or an irregular cedar tree, and allowed to branch out at its summit, it forms a very striking object in small gardens,—giving in winter a green aspect

and cheerful tone. One such instance, in Philadelphia, has caused us often to visit the parlor from which it is seen for this object alone. A very singular effect produced by ivy, occurs in the approach road to Warwick castle, within the outer wall. The road is cut through a solid bed of sandstone rock, and its sides are in some places upwards of 12 feet high, and perpendicular and smooth. Ivy has been planted on the upper surface of the ground, forming the summit of these perpendicular walls of rock, in order that it might creep down and cover their face. Instead of creeping, however, the ivy has grown over without attaching itself; and its long, pendulous, matted roots, trailing even on the coach road, waving to and fro with the wind, might be compared to an immense sheet of water, falling over a perpendicular rock. In close shrubberies, in gardens, where neither grass nor any other green plants will grow on the surface, the ivy forms a clothing of perpetual verdure. Trained against espaliers, lattice work, iron hurdles, or wire frames, it forms, in a very short time, most beautiful evergreen walls, or hedges, for the separation or shelter of flower gardens. In short, there is no evergreen shrub capable of being applied to so many important uses as the common ivy; and no garden can dispense with it. The London gardeners have a plan which we commend to the notice of our own; they raise immense quantities in pots, and train it to stakes of from 6 to 12 feet in height, so that, at any season of the year, a hedge may be formed of it, or a naked space covered with it, at an incredibly short notice. By placing pots of ivy in the balconies of the different windows of a perfectly new house, the whole front, in one day, may be covered with rich evergreen leaves, as effectually as if it were an old building, in a secluded rural situation. Another valuable use, to which the ivy may be applied, is to form external framings to the windows instead of architraves.

But we have not done with the uses of this beautiful plant. Some ladies of our acquaintance train it round four stakes; thus making green walls into which they place their pots, or glasses of Hyacinths and Tulips when in bloom. Nothing can be more ornamental. Others plant it in boxes, and train it on light bamboo espaliers, where it forms a rustic screen for the window. With a green baize on the back or parlor side, the effect from the street is superb; and in very large drawing-rooms, plants in boxes or vases, trained on wire parasols or eapaliers, will form a rustic canopy for small groups of parties, who may seat themselves under its shade, in the same manner as parties sit under orange trees in the public rooms of Berlin, and of other cities of the continent. Where the view from the window of a town house is contracted, or disagreeable, it may always be improved by ivy, planted in boxes, and trained as espaliers,—being placed within the room at a sufficient distance from the window not to exclude the light, and yet sufficiently near to serve as a screen; or by so disposing of plants on the outside as to conceal or disguise the disagreeable objects, and create an allusion to the country.* Another great advantage of the ivy in small and suburban gardens is, that by its berries it attracts birds in early spring, and by its dense foliage it forms excellent situations for nests. Whether it is injurious to trees or not is a disputed point; but we believe that in time the network that is ul-

* In these remarks, there is nothing impracticable. The giant or Irish variety should be used on account of its rapid growth; the plant bears the heat of the parlor admirably, and a little time only will be required to produce all these effects. As a division fence for burial lots in our rural cemeteries, the ivy, trained on the new and cheap wire fences, would be admirable.

timately formed by it, prevents the tree from expanding, and injures, if it do not kill it. But we should prefer an ivy clad tree for twenty years to a bare one for thirty. Buildings are not injured by it, except where shoots can find their way through cracks or crevices, where it may expand and cause an extended opening.

Bacchus is represented crowned with ivy, some poets say because it has the effect of dissipating the fumes of wine. It is considered symbolical of friendship, for the closeness of its adherence to the tree on which it has once fixed itself. Its constancy has rendered it a favorite device for seals; some of the best of which are a sprig of ivy, with the motto—"I die where I attach myself;" and a fallen tree, still covered with ivy, with the words—"Even ruin cannot separate us."

To attain a large size, it requires a good soil; it grows best in the shade, and in a northern rather than a southern exposure. Unless the soil is kept in a uniform state of moisture, and shaded, it will not root readily; we therefore recommend its purchase in pots, where they can be had. Some specimens of old ivy trunks measure nearly twenty inches in diameter. When slips are planted, do not bury them deep; rather lay them near the surface.

We have not exhausted the subject, but fear to extend this article, which is the result of some experience, aided by the remarks of Mr. Loudon, in his Arboretum Britannicum,—a work remarkable for its extraordinary research; every topic, connected with arboriculture and floriculture, being treated in a manner that leaves little to be desired. The difficulty is, that it is so expensive. An abridgment, however, has been published in London, which every frequenter of a garden should possess, if he cannot compass the larger copy, the cost of which is about fifty dollars,—four large volumes of text, and four smaller of plates.

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[Our correspondent has not overrated the merits of the finest of all climbers. Perhaps the finest specimen in America is at Sunnyside, the cottage of Washington Irving, on the Hudson, the walls of which are wreathed and covered with it, as with the richest drapery. *North* of this, the ivy is rather tender, and will only succeed on the north sides of buildings, or walls, or under the shade of trees, where it is protected from the sun in winter, which kills it by sudden thawing after severe frost. Ed.]

ON THE CULTIVATION OF GREEN-HOUSE PLANTS.

BY R. B. LEUCHARS, NEW-HAVEN.

The season is now at hand, when plants that have been previously stowed away into summer receptacles must be attended to, and arranged in their winter quarters. And the inquiry will come home to every gardener, who has plants under his charge, which plants are those that endure a greater severity of cold than others? and why is it that a plant will at one time survive a given amount of frost, and at another time be killed? Why is it, also, that the points of the shoots of certain plants are killed by a slight frost, while no other part of the plant sustains injury? These questions are purely practical, are exceedingly interesting, and are worthy of our candid consideration.

To receive a satisfactory answer to these questions, it is not absolutely necessary for us to ransack the foundations of every impracticable whimsicality and physiological theory that we may hear of. Acute observation will quickly develop principles that will form the groundwork of true and practicable theories. An experienced gardener, or any person acquainted with plants, is seldom at a loss to account for any particular effects upon his plants after he has carefully examined them; and he can form a pretty correct idea what they have been subjected to. I do not mean to raise the question,—although it might be interesting enough in a country of so varied climates as this,—how long, under ordinary circumstances, would a gardener require to make himself master of all the peculiarities of locality and climate, in any given situation where he may be called on to exercise his practical skill? Certain it is, that these peculiarities must be learned; for we are all aware that locality and climate act upon plants in a very striking and remarkable manner. It is no less certain, however, that plants are changed in an equal, if not greater, degree by good management. Indeed, it may be said that the science of gardening, if carried out to its legitimate end, either does, or ought, in the hand of experienced gardeners, to set aside in a great degree such local causes and their effects. No one that has witnessed the splendid specimens of flowering plants, brought forward at the London exhibitions, and compared them with the wretched looking objects of the same sorts to be seen in many private collections, will fail to assent to the justice and truth of the above assertion. In this particular, the best exhibitions I have yet seen in this country are immeasureably behind,—not in quantity, indeed, for their number in some collections is legion,—but in quality. Like causes, however, produce like effects. The management of green-house plants is no mystery, although many are too apt to look upon green-house plants as having something mysterious about them.

In the culture of plants, as in every other department of gardening, it is necessary that there should be line upon line, and precept upon precept, to keep us in constant remembrance of the important fact, that nearly all the plants, from the temperate regions of the globe, make and mature their growths at different periods and under different circumstances from those which popular belief generally receives. We are too apt to treat plants as if they just commenced with the periodical return of spring, and continued to grow and shoot until they were checked with the colds of autumn. Different kinds of plants grow and ripen their shoots at different periods of the year; some in early spring, some at mid-summer, and others in autumn. This fact alone will show the vast importance of bestowing all possible care upon plants in pots during the short period of their growth; for it will generally be found that the bloom of the future year will depend chiefly upon the manner in which the growths of the preceding year have been treated. There may be solitary exceptions to this rule in neglected plants blooming abundantly; but these exceptions only prove its truth.

When plants have been turned out into their summer situation, they in many cases receive little more attention (except watering,) till the approach of frost renders it necessary to return them again to the green-house, by which time they have not unfrequently become soured, and saturated with the autumn rains. The soil in the pots will be charged with stagnant moisture—the particles disintegrated, and reduced to a soft, pulpy mass. The moisture having

displaced every particle of atmospheric air, and by its own specific gravity the earth, in the event of drying, subsides, and acquires a degree of adhesion by which the roots of plants are invariably destroyed. Moreover, when they are placed in the house, and thereafter subjected to the influence of fire heat, they must continue in their condition of uncomfortable sourness, by the necessary application of water; or, if allowed to become dry, and the excess of water expelled, the roots will then be embedded in a substance approaching pretty nearly to the consistence of a brick-bat. Every cultivator is aware that in such a condition the plants can neither be healthy, vigorous, nor bloom abundantly. In these cases, it will be advisable to turn out the plant, and take away as much of the inert soil as possible, without damaging the roots, and replace it in a clean well drained pot, filling up with good rough turfy soil, mixing it with pieces of charcoal about the size of a walnut. Indeed, many plants will stand a liberal shift at this season, if large specimens be desired. Those not shifted should, nevertheless, be turned out and well examined, to see if they are all right as regards drainage. Some may object to this turning out and shifting of plants in the autumn. It may have its faults, like most other systems; but it has also its advantages. And upon the whole, I see no necessity for adhering rigidly to established rules as to the time or season for shifting plants, merely because it was the custom of our grandfathers to turn out all their plants, and shift them at particular seasons of the year. For my part, I shift a plant always when I find it requisite, any day all the year round, providing I have materials at hand in a proper condition for doing so; a circumstance that should be provided for, by having a quantity of peat and loam in a turfy state, secured under cover for winter use.

Whenever the weather assumes an unfavorable aspect, plants in pots, standing out of doors, should receive attention. I have seen good specimens damaged irremediably by a sudden change of weather. Dashing rains, followed by a slight frost, at a time when the plants are in a bad condition to bear it, will completely nullify all the care of the preceding summer.

I presume it will hardly be necessary for me to mention, that previous to housing the plants, the house must undergo a thorough cleansing; every shelf-nook and crevice should be well scrubbed out, so that all insects, with their eggs and deposits, may be exterminated. The most effectual method of doing this, is by fumigating the house with sulphur. This can only be accomplished, however, when the house can be entirely cleared of plants; as the sulphurous gas, even in very small quantity, destroys vegetable as well as animal life. Therefore, when there are climbers or large plants that cannot be conveniently removed, the house may be fumigated with tobacco instead. In either case, the house must be thrown open, and well aerated for a day or two after smoking. The crowd of summer flowering plants, such as Gloxinias, Achimenes, &c., will now be losing, or will have lost their beauty, and may be stowed away on back shelves and any other dry airy place to ripen their tubers, withholding water gradually as the foliage fades. It is likewise of great importance to have any alterations and repairs done in plant structures at this time. The heating apparatus, of whatever kind, should be examined and put in good working order. Attention to these things, at this season, will probably save a good deal of time and trouble, after we are once fairly fettered by the "ice

king." But on this subject I will make some remarks in my next paper.

In staging the plants, they should receive as much room as the structure will admit; and those that are less hardy than others should be placed where they will be less exposed to currents of cold air during the months of winter. The plants ought to be systematically arranged; for, simple as this matter may appear, much of the beauty and interest of the house, as well as the well being of the plants, depends upon the manner of their arrangement,—placing them so as to harmonise with each other,—keeping an eye at the same time to the placing of those plants in those parts of the house which are best adapted for them. When the house is filled, it should continue to be freely aired night and day, until severe weather renders it necessary to shut up at night. And this ought to be done gradually, otherwise many of the plants will be started into growth by the sudden stimulus; and Camellias in particular are very likely to drop their buds, and their leaves to assume a yellowish hue. This is a common occurrence; and it is with severe and uncontrollable reluctance that we ascribe this sickly appearance to the cause which produced it. We are too apt to forget that it is one of the most valuable qualifications of a good gardener; and one, too, that ought to receive credit for its worth, to be able to attribute each effect to its own cause, without manifest confusion, and questionable reconciliations of discrepancies.

In a geographical range, (if I may so call it,) so wide and so varied as that enjoyed by your excellent journal, let it not be expected that any given routine of practice therein inculcated, can be equally applicable to all sections, in the culture of fruits, flowers or vegetables; and in offering these remarks, my object is chiefly to direct the attention of gardeners to those primary and important questions in the first paragraph of this paper,—questions so intimately connected with successful culture; for unless our minds are very much occupied with the things about us, we shall derive but little advantage from either, for the guidance of our actions and the forming of our principles. It is but little use for a gardener to possess a smattering of scientific knowledge, unless he can associate it with proper ideas of things around him, and reduce it to practice in his daily operations. We must raise the standard of gardening by our own exertions, and chiefly through practical perseverance. Meantime, I will conclude by observing to those who may read these papers, that they are solely intended for those who are young in the art, and whose practical knowledge may not be equal to their zeal. I am aware some will cavil at many of my remarks; but it is difficult to please every one, and it's idle to try. If I have made any mistatements, I shall be glad, and thankful, to be set right; but I have neither time, taste, nor talent for recriminating controversies, being convinced that those who resort to such quibbles manifest that they argue more for a controversial triumph than the elucidation of truth; probity is frequently overlooked, and usefulness has nothing to do with the matter. These remarks are the result of hard earned experience, and what I conceive to be true. I do not write for those who are too knowing to learn, and too prejudiced to be convinced; but for those who are willing to be instructed, and whose minds are open to advice. I trust my good intentions will be appreciated by those whose good opinion is worth having; and as for the other class, I neither dread their opinion, nor court their applause.

R. B. Leuchars.

October 10, 1849.

A CHAPTER ON BIRDS.

BY ORNITHOLOGY, RHODE-ISLAND.

An article in the October number of the Horticulturist, recommends giving accommodations to wrens in and about our enclosures.

Permit me to give the character of this little bird, without scandal, vouching for the truth of every charge, which may be confirmed by the observation of any one.

One pair of blue birds will destroy more injurious insects than six pair of wrens,—the food of the latter being partly spiders. There is another objection to the wrens; they will drive away from their district any other bird, by destroying their nests and eggs. A neighbor of mine shot eleven of these little pirates in one season, after which the swallows, blue birds, robins, sparrows, &c., returned and rebuilt their nests. Where there is room enough, every house should have about it from one to ten bird boxes—all single—made of half inch boards, four and a half by six inches, in the clear, inside. The hole, or door, should be two inches in diameter, made near the upper end, with a perch broad as the box, like a shelf, *tenoned* in, two inches below it, and projecting three inches, the outer corners rounded. The piece which forms the back part of the box should extend beyond the rest, either up or down, about four inches, by which the box may be screwed or nailed to a building, or the trunk of a tree. They should never be placed nearer to each other than forty feet; and it is best that no one be visible from another, as birds are *jealous*. A bird house, with accommodations for more than one pair, is useless, except for martins; as no other [wild] birds live in communities in tenements thus provided for them. The martins here were nearly all destroyed by a very cold N.E. storm in the latter part of May, twenty years since; and I may add the swallows, which feed wholly on insects *on the wing*. That storm continued until they starved; no winged insects left their retreats for upwards of ten days. Since that time, few martins have been seen in New-England. In their place, we now have the white bellied swallow, which before were rarely seen; but they require separate lodgings, not nearer than thirty feet. The clift, or Rocky Mountain swallows visit us in great numbers, attaching their nests of mud, (sometimes resembling an inverted retort,) to the eaves of houses and outbuildings.

Robins, and some other birds, will build their nests in the same place, year after year, if the old nests be removed before they return in the spring.

The late Gardner Green's gardener once entrapped a flock of winter birds by baiting them in the green-house, where he kept them until spring. Acting upon this suggestion, an acquaintance of mine commenced feeding birds on a piazza, fronting south, in the month of November, at the first fall of snow. A little millet seed was first thrown upon the platform, which soon attracted large flocks of tree sparrows, snow birds, lesser redpoles, and occasionally a few song sparrows, and still less frequently a solitary white throated sparrow. The fox sparrows came in the fall from the north, and stopped again on their return in the spring. Oily seeds, hemp and sunflower, and the kernels of various kinds of nuts, were next tried, which attracted the

chickadee, or black capt titmouse, and the nut-hatch, and sometimes the downy woodpecker. All of them relish a piece of fresh fat meat; (salt meat is injurious to them.) In the country, the blue jay will come regularly for a breakfast of corn; he is also a lover of fresh meat, but should not be permitted to visit the garden or orchard in the summer, as he is known to devour the eggs and young of other birds. My friend next put up troughs, plowed out about an inch deep and an inch wide, in a solid piece of pine wood about three feet long; these he attached by screws to the outside window frames, placing one opposite to each bar of the lower casement, and one on the window stool; into which he put the various kinds of seeds named above, from which the birds fed without fear, as they were unable to look into the house, it being darker than their own position, so that the persons in the room could silently approach within a foot of them. Seven kinds of birds have been known to make their daily calls through the winter, and some of them in great numbers, especially at the approach of a snow storm. These little visitors are amusing, and their innocent society helps to cheer us through the winter.

ORNITHOLOGY.

Rhode-Island, Nov. 12, 1849.

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[We recognize the pen of a friend, whose enthusiastic and genuine love of nature has made a long life happy in the indulgence of such studies and feelings as these. We shall be glad to hear from him again. ED.]

A JOG IN THE FRUIT GARDEN.

BY AN OLD DIGGER.

WHEN the month of November comes, it is worth while to look about a little, and see how you stand in the garden and orchard. You must be a miracle of expertness if you have not failed in some crop or other, or if some tree or plant has not baffled your wits. Well, this being the case, now is the time to look about and resolve, either that you will succeed better next year, or that you will abandon that crop altogether.

So, go into your kitchen garden; if your soil is poor, or worn out and full of insects, this is the very time of all others to doctor it; and here is my prescription, which I have proved over and over again. Clear off the plot of ground to be renovated, and cover it with a good dressing of *fresh stable manure*, with the litter in it. Begin at one side of the plot, and throw up the soil into ridges, digging it about 18 inches deep, and mixing the manure through the soil as you dig. Here let it lie all winter. The atmosphere and the frost will have a grand chance to do their best in bettering the quality of the soil itself; and the essence of the manure will not only be all taken up by the soil, but its coarseness will be broken down by the spring, so that your plot will be in the best possible order for vegetables when the swallow comes.

If you are troubled with grubs and insects in the ground, (and you must be something more than a "big bug" yourself, if you are not,) then you must also treat it with a dose of salt. Scatter any refuse or coarse cheap salt over the earth before you begin to ridge it up, at the rate of a bushel to the eighth part of an acre—or eight bushels to the acre. Put on at this season, it will do no harm to anything vegeta-

ble, and will thoroughly rid you of these enterprising little gentry, that crawl out of the ground in May and June, and quietly play Guy Faux to the roots and stems of the tenderest things that the pot boils. Besides, leaving out of sight the virtue of salt as a manure, it helps all *dry* soils amazingly; giving them greater attraction for moisture, and greater power to hold it in dry weather; and that is no mean thing for a crop that gets thirsty in mid-summer.

In the review of your forces at this season, before they go into winter quarters, it is ten to one but you will find, staring you in the face—possibly not ten paces from your door-steps—some excellent old friends, whose acquaintance you begin to be ashamed of, and are sorely tempted to cut at once. I mean some good old *fruit trees*, still very sound and healthy, but utterly refusing, for years past, to bear any good fruit! Possibly they are Virgalieu or Butter pears, Pippin or Pearmain apples, whose good name is a thing handed down to you by your ancestors; and you are therefore not a little sorry to *cut* them. Don't do it. Let us have a little talk over these trees.

Did they ever bear good fruit in this soil? "Bless you, yes! Such fair golden skins, and luscious melting flesh, as I seldom see now a-days." How long ago is it that they have stopped bearing such fruit? "Say a dozen or fifteen years." What have you done for them? "Not much—scraped the bark, washed it with soapsuds—spread a little compost over such as stand in the grass. Those that stand in the garden, you know, are in good rich soil; so, of course, they could not want for manure."

This is what my friend says, but I don't believe a word of it—I mean of the last part—that they "don't want for manure." If I were a "Hoosier," or a "Buckeye," I should say they don't want "anything else." Have not they the same atmosphere to breathe, the same rain to drink, the same climate to enjoy, as when they bore the fine crops of fruit which you lament? What has changed? Nothing; absolutely nothing, but the soil.

Need I go any further to establish this? I hope not. But the soil is probably pitiably *run out;* run out, past the power alone of stable manure to bring it up again. It is run out, as the chemists say, in "lime and the phosphates." But it can be renovated, just as surely as there is manure and lime and the phosphates to be had; and you may set about it now if you please, for this is the best time in the world to begin.

Now to do this well, and thoroughly, will cost from two to three dollars a tree, labor and all included. An old officer of this sort, that has been off duty and on half pay for ten or fifteen years, can't be brought into active service again without squaring up old accounts somewhat; and you must make up your mind to this, or else have no further fruits from the old veterans.

Supposing we commence with a middle aged pear or apple tree, with a sound constitution, which has been sulking for some time past on half pay. Now it is all very well to say that this tree don't want animal manure. Its roots have been in the same place for twenty-five or thirty years, with only a little sprinkling of something stimulating over the tops of the soil, which the grass indeed has pretty much taken to itself, or a slight yearly dressing of compost (if it has stood in the garden,) which the vegetables have devoured. Look at its little, short jointed shoots, and unthrifty growth, and you will see that, first of all, it wants manure.

Very well. Now clear away everything in the shape of trees, shrubs, bushes, or

vegetables of any kind, that stand within 15 feet of the trunk of this tree. Next, bring a good two horse wagon load of fresh stable manure, and trench it under as deeply as the roots will let you, and particularly *beyond* where the roots extend. It is as foolish to put manure within five or six feet of the trunk of a tree, as it would be to pour drink over the back of a thirsty man. At the *very outside of the roots* trench the soil two feet deep, and mix the manure with it,—leaving it rough and loose for the winter; for it is there—at this outside limit—that the roots will get a good living again.

But this is not the whole which is to be done. Remember that lime and the phosphates must be supplied; for it is above all, these that old soils grow poor in. It would not do to put them in with the fresh manure, since they would not agree well together, but would go to decomposing one another, instead of making a succession of good dinners for the "feeders"—that is to say, the little fibres of the roots.

But next spring, as early as the soil is dry, you must apply to each large tree, manured in the fall, two bushels of ashes and a peck of plaster, or gypsum; and if it be a pear tree, a half bushel of bone dust. If it is an apple tree, you may substitute a peck of air slaked lime for the plaster. Spread this evenly over the soil that was dug and manured last autumn, and mix it through the whole with a stout three pronged fork. This will bring the soil to a good condition again; and the old tree will speedily commence making new roots,—setting new fruit buds, and, the next season, begin to bear fine fruit again. And this I do not give you from theory, but from actual trial, under the most unfavorable circumstances.

I do not tell you to prune your tree, because I very much doubt the wisdom of it the first year. I would only see that the bark is clean and smooth, and give it a little more *soft soap*, if necessary, in that quarter. After the tree has begun to exhibit signs of feeling the *full pay* you have given it,—say twenty months hence,—then you may, if needful, prune it moderately. When, indeed, the tree is partly decayed, or broken, or full of tangled and cross limbs, I would be a little severe with it at first; but not otherwise.

This is the season when a shrewd old digger should go over his peach and plum trees, scrape away the earth about the bottom of the trunks, and look for that little rascal—the peach worm. If he is there, expecting that "there is a good time coming," now that he is in such comfortable winter quarters, you will know it by the gum, by which the tree always shows to its natural protector the presence of its enemy. Wherever you see this gum, take your knife, open the bark, and take out the vile grub. If he stays there a few months longer, he will completely circumnavigate the trunk; and after he has been round the world in this manner, there are no more peaches for you. It is a matter of five minutes to a tree; and if you grudge that pains, for rareripes, the grub will take five months at it, and get the better of you.

If you are planting fruit trees, don't be so foolish as to set "tender trees," such as apricots, nectarines, and so forth, in warm sunny places, on the south side of walls, fences and gardens. Such are, depend on it, the very spots to kill them,—between the extra heat of mid-summer, and the constant freezing and thawings of the trunks in winter. You had better choose a west, or, if not too far northward, even a due northern exposure. The latter is much the best in the middle states.

Never plant a tree with small roots and large top—when the roots have been made small by the spade in digging—without making the latter small also. There must be some ballast in the hold to carry so much sail on the mast, as an old salt would say; and you will gain in the health and size of the tree, three years hence, by shortening-back the *ends* of the longest limbs till you have struck a fair balance between the part that collects food and the part that consumes it. Yours, AN OLD DIGGER.

DESIGN FOR A VILLA WITH A CONSERVATORY ATTACHED.

THERE are few more agreeable compositions in domestic architecture than many in the rural Gothic style. As it is peculiarly well suited to a northern climate, and to picturesque sites, it has already been considerably adopted in this country.

Very essential modifications of this style, as known abroad, must be made in introducing it into this country. One of the most important of these, is the introduction of the veranda,—a feature little known in the architecture of northern Europe, but indispensable in a large portion of the United States.

Verandas, as usually seen in rural Gothic country houses, are too light and flimsy to accord with the solid character of the rest of the building. In the present example (see FRONTISPIECE,) a very simple and solid mode of constructing this feature is indicated, which is in better keeping with the style, when all is built of stone or other solid materials.

This design is very simple in form, and may therefore be executed at a very moderate cost, for a dwelling of this class. The projecting roof shelters the walls thoroughly from the effect of the weather, which renders it a very suitable plan for brick and stucco construction.

The plan of the principal floor shows a very agreeable and convenient arrangement; one where comfort and good effect are combined in a very considerable degree. The stairs being placed in a side entry, the hall, 14 by 22 feet, is left free, and may be considered one of the most available apartments in the house, while opening, as it does, by sliding doors into the library. The whole can occasionally be thrown into one apartment. The library is well shaped for its purpose; and the long extent of wall, on either of its longest sides, will allow much more space for books, and a much better arrangement of the books themselves, than we usually see in rooms of this size.

From the parlor, a door opens into the green-house, or conservatory. This is placed so as to form a wing on one side of the house, which is balanced by the kitchen wing on the other side. We have introduced this to show how a simple green-house may be treated, so as to give it some architectural character,—as we but too frequently see mere nursery-like glazed sheds, joined to houses otherwise in good taste, the effect of which is never satisfactory. A conservatory, properly so called,—which differs from a green-house in the plants being chiefly planted in the ground, instead of pots,—is the most satisfactory plan for such a structure when it is attached to a dwelling; because, although the glazed roof is partly taken out in summer, the plants remain, and the interior never has the de-

serted appearance of most green-houses at that season, but is an agreeable sight at all times.

The remainder of the plan of this floor will explain itself. The arrangement of the room and the position of the veranda, are well calculated for a site where there is a fine view wholly on one side of the house; the library, bed-room, etc., occupying the opposite side, so as to secure quiet. The hall and library are intended to be heated with warm air. The second story will contain five or six excellent bed-rooms, with servants' rooms in the attic.

VAIL'S AUGUST DUKE CHERRY.

By the kindness of the originator, Henry Vail, Esq., of Troy, N. Y., we received fine specimens of this new cherry last August, when they were in perfection, and made the accompanying outline and description at that time.

An excellent cherry, which ripens a full month after the cherry season, and nearly three weeks later than Downer's Late,—cannot but prove an acquisition, even to fruit gardens of the most moderate size; and such a fruit we believe the August Duke will prove to be.

This variety, as its name implies, belongs to the sub-acid family of cherries, which the May Duke popularly represents. Its greatest value, therefore, will be for cooking and preserving, though it is also a very beautiful and acceptable addition to the mid-summer dessert. It is of the general appearance and character of the May Duke,—the fruit borne upon the branches in the richest clusters, and their colour a brighter red than that of the May Duke. The foliage also is that of a Duke cherry, and coarsely and doubly serrated.

The fruit ripens at Troy about the 8th or 10th of August, and hangs a good while on the tree. It is likely to supplant the late Duke (*Cerise Anglaise tardive*, of the French,) a fine late cherry; but one which, from its defective habits of growth and bearing, has never come into general cultivation either in England or this country.

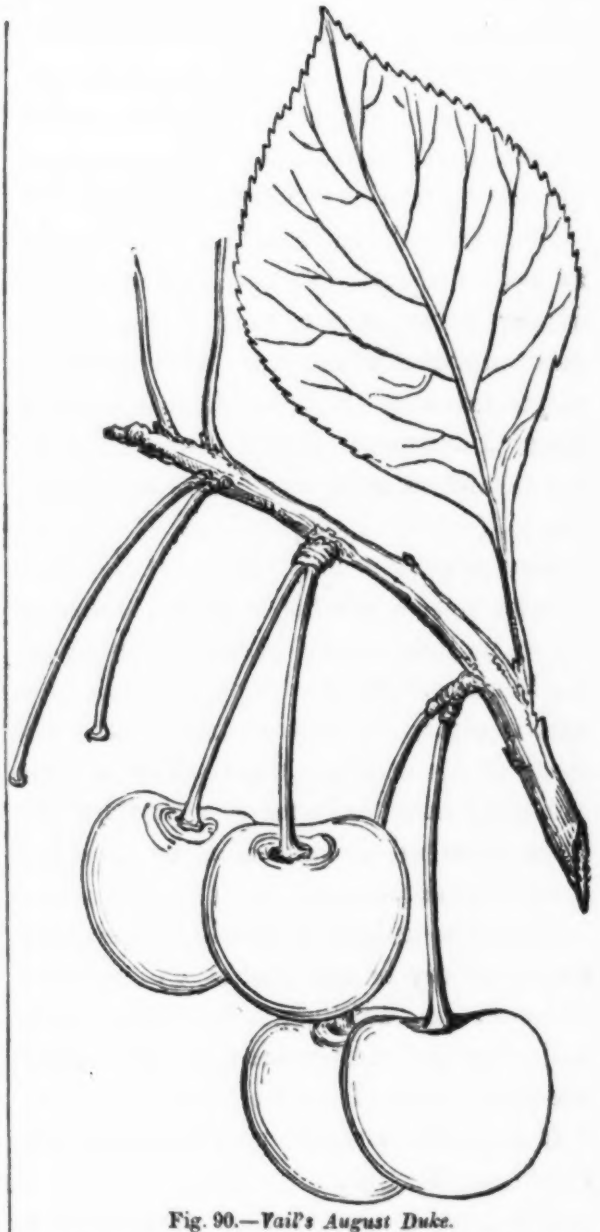


Fig. 90.—*Vail's August Duke.*

The following is the pomological description of the fruit:

Fruit borne in pairs, and the pairs hanging in thick clusters along the stem; a third larger than the May Duke in size; obtuse heart-shaped in form—very regularly shaped, with the remains of the pistil point at the apex, always a little on one side. Stalk—of moderate length and size, but twice its average thickness where it joins the fruit—is inserted in a rather deep but narrow cavity. Skin—rich bright red on the shaded side, and of a lively cornelian red in the sun. Flesh—tender, sub-acid, much like the May Duke in flavor. Pit—oval.

We believe the original tree at Mount Ida farm—Mr. Vail's residence, near Troy—is the only one of this variety that has yet borne fruit; and it will probably not be till the autumn of 1850, that young plants will be offered in any of the nurseries. It bids fair to be a valuable fruit for all parts of the Union,—even those where the heart cherries do not succeed well.

BURSTING THE BARK IN CHERRY TREES.

BY L. YOUNG, LOUISVILLE, Ky.

UNDER cover of your broad invitation, I have ventured to take part in the interesting discussion now going on in your columns, upon that "vexed question"—what is the cause, and what a proper remedy, or preventive, for the bursting of the bark of the cherry tree?

I am not so vain as to presume that the objections herein urged, (even if well founded,) and the theory proposed, will settle this question. I am well aware that it is easier to pull down what others or even ourselves may build, than to erect impregnable structures. Still, holding that in a discussion of this sort, the detection of error is a matter second only in importance to the discovery of truth, none will be more pleased than myself to see it made manifest, that my own deductions are unwarranted by facts.

Two gentlemen—Prof. TURNER of Illinois, and Mr. ELLIOTT of Ohio, have written good articles on this subject,—both communicating many useful facts. They seem to agree in setting down the cause of the evil to the account of luxuriance of growth, but differ in opinion as to the way in which the injury is brought about. Professor TURNER supposes that the outer-ring-bark thickens, and loses its power of expansion by rapid growth; and that, in this condition, acting as a band, it causes the whole bark to burst before it will yield to the swelling trunk. Mr. ELLIOTT thinks luxuriance of growth causes sponginess of texture, and that in this way the tree is rendered susceptible to injury from the cold of winter. Unable to yield my assent to the *modus operandi* of either gentleman's theory, I propose to examine them somewhat in detail.

In the first place, the cause of such an injury must be *some harm-producing agency, ever present when the evil happens; and, when present, always resulting in evil, unless restrained by some counteracting force.* Luxuriance of growth does not answer these conditions; for moderate growers, and trees in a state of debility, sometimes burst their bark. Again, in a few favored spots, even

in the west, the Heart cherry is grown without trouble, be that growth moderate or luxuriant.

It appears to me that trees of very vigorous growth and full habit, are more frequently injured in this way than those of moderate growth; but debility, no less than luxuriance, increases liability to harm. It would seem to me more logical to term both the one and the other, conditions of susceptibility to injury, rather than causes thereof. This, however, is a matter of little importance, and may seem a "drawing of distinctions where no difference exists."

To proceed with the theories of the two gentlemen; and first, with Professor TURNER'S. I think that of all the trees in the forest, field or garden, the vigorous grower would be the last to turn "felo de se," by bursting its own bark by its own agency; and that the Professor's reasoning on this point is founded in error. This will be made manifest by a recurrence to first principles. The trunk of the young tree, at birth, is composed of the arch work of the pith, which gives to it rotundity, and holds its fluids in suspension as a sponge—of the medullary sheath, the parenchyma, and the "outer-ring-bark," or epidermis, all cellular tissue, and composed of medullary matter. As soon as woody fibre is formed in a cylindrical mass around the medullary sheath, the whole cylinder seems divided into a number of nearly equal sections, by radii of medullary matter, running from the circumference toward the centre, and communicating with the medullary sheath. Upon the outer arc of each of these subdivisions, or sections of the woody fibre, rest the bark vessels, as upon a base,—they running longitudinally up and down the trunk on each subdivision, in form of a triangular prism; each pair of prisms of bark vessels upon adjacent arcs, being separated only by the same medullary ray. So that the skeleton of the trunk of a young tree (as is seen at a glance by cutting a free grower, as the cherry, peach or linden,) resembles a fluted column; the interstices between the flutes of which are filled with fleshy matter, as it were, issuing from the medullary ray. It is thus plain, that there are as many sutures in the live bark of a tree as there are medullary rays. During the growing season, the flow of sap acts as a solvent upon the medullary matter, holding the edges of these sutures in contact; and the annual growth of woody fibre serves as a propelling power to open these sutures, and expand the bark. Surely, then, the greater flow of sap must furnish the better solvent, and the larger annual growth the more efficient expansive force.

That the "outer-ring-bark" does expand, and that freely, upon a thrifty tree, up to the time when the bark naturally changes its character, (the change coming upon most trees about the time they begin to form heart wood,) is a truth I think very obvious. Such a tree has a smooth, glossy, almost transparent epidermis, or outer-ring-bark; and if we examine it closely in the growing season, it will be found that the expansion is so rapid as to rupture the bark; and numberless little interstices will be formed, through which the white fleshy substance, uniting the sutures in the bark, immediately issues, and being hardened by exposure to the air, closes each interstice. Hence, we often see the trunk of the thrifty cherry, or peach, look as though penciled with numberless horizontal white lines, of an infinite variety of lengths.

It is your starveling, in both the animal and vegetable kingdom, whose skin thickens and grows rigid; and I believe that "bark-bind," like yellows, in the peach tree, is a consequence, and not a forerun-

ner of debility; the result of disease, but not itself a disease.

Scarcely less objectionable than the theory of Professor TURNER, seems that of Mr. ELLIOTT, which asserts the doctrine that the wood of a tree is solid or spongy in proportion to its luxuriance of growth. If this theory be true, then that most practical of judges, the wood-chopper, is in error, when he chooses for the handle of his implement a hickory of the largest possible annual growth,—supposing it, for that reason, stronger and more elastic. If this theory were true, then every board from the hands of the polisher should present a motley surface, composed of alternate stripes, more or less solid as the annual growths were more or less luxuriant. Such a theory I think is equally unsupported by the principles of vegetable physiology. In the formation of woody matter, the law of the combination of atoms is fixed and invariable; and to secure its enforcement, the law-administering power is ever present where woody fibre is formed. Thus, if upon a Bartlett stock we insert the Seckel pear, and again, by double work, graft the Bartlett upon the Seckel thus inserted, so that the branches and roots are Bartlett and the trunk Seckel; or, on the other hand, if the trunk were Bartlett, and the upper and lower portions of the tree Seckel, all the power of the luxuriant foliage and vigorous roots of the Bartlett could never make the pores and fibre of the Seckel larger than was peculiar to its species; nor could the dwarfish system of roots and leaves, peculiar to the Seckel, prevent the Bartlett trunk from maintaining the same proportion to the Seckel at the upper and lower points of insertion, which an individual thread of the woody fibre of one variety bears to an individual thread of the other,—because, in every tree, the size of the atoms composing its woody fibre is controled by the constituent elements of the medullary matter peculiar to its species. It must, then, be true that the tree which forms a thick cylindrical ring of woody fibre in one year for its annual growth, and a thin one another, forms a greater number of single threads of woody fibre in the former case than in the latter; for as they all touch, and are all of the same size, its additional volume could be acquired in no other way.

The following is the very rude theory I propose to submit, that is to say: The bursting of the bark of the cherry (and some other trees,) proceeds from two causes,—extreme heat, or extreme cold; to each of which belongs a separate set of conditions of susceptibility on the part of the tree. Cold does its work, by expanding the fluids in the tree to a point producing rupture of the parts. A full habit of growth in the tree, a wet location, and saturation of the soil by heavy rains, are circumstances which tend to swell the amount of fluid in the circulation; and if present when the tree is exposed to intense cold, tend greatly to aggravate the force of cold. Great heat—long continued—sometimes does the same work by a partial or entire exhaustion of the circulating fluids by evaporation. Its chief victims are trees of feeble habit, or trees casting their leaves prematurely in summer.

If this theory were true, it would suggest, as a remedy proper for trees already affected, mulching the roots, and wrapping the affected parts with straw during winter, in order to modify the effect of cold, and in order to keep the injured part dry; for when water is admitted freely, those injuries spread year after year. Perhaps the surest guaranty against injury from cold, would be the planting upon elevated ground, or some artificial hillock, calculated to secure a perfect drainage for the roots. This

course would prove a sufficient check upon the evil of over-luxuriance in growth. If the tree affected be feeble in habit, nothing would be more likely to renew its vigor than good treatment, aided by Mr. DOWNING's method of heading-back or shortening-in. In such a case, slitting the bark or removing the epidermis might be tolerated.

Very respectfully yours,

L. YOUNG.

CRITIQUE ON THE OCTOBER HORTICULTURIST.

BY JEFFREYS, NEW-YORK.

The Leader.—Many thanks to you, Mr. EDITOR, for teaching us, in these instructive conversations, how to enjoy many excellent edibles out of their proper season, of which we otherwise might not know the benefit; and most particularly the unripened muskmelons, which is altogether new, I dare say, to nine-tenths of us. I, for one, shall try them this very week, and tell you next time "how they go."

But those "Walcheren cauliflowers." How are they different from the fine cream coloured English plant of that name, which we grow so luxuriantly in cool, moist seasons, and which fail almost altogether in dry ones, like the one now passing? Do tell us a little more about them in your next number.

Notes on Foreign Grapes, and Osage Orange Hedges.—Mr. COLT deserves the thanks of every pomologist for telling the exact truth about "foreign grapes" *out* of doors. I know scores of pains-taking men, who have tried them as faithfully as he has, and with no better success,—among others, foreigners themselves, who imported great quantities of them in wide variety, and went enthusiastically into their cultivation, but were forced at last to give them up in despair. The glass vinery is the only thing where they will succeed in America. To be sure, I have known, now and then, a Black Hamburgh or a Sweet Water, or, few and far between, a Golden Chasselas, that flourished for a few years against a *city* house wall, and bore good fruit; but, as a general rule, they are a failure. None but native grapes can be depended on for American culture in *open air.*

The Osage Orange is not reliable for hardiness north of latitude 41°. It is a beautiful shrub, ornamental in the lawn, and, when in a very favorable situation, will make a compact and beautiful hedge in a *show* ground. But the Buckthorn is better. Still, best of all, as we shall finally prove, will be the wire fences. I am surprised that none of your correspondents talk upon this subject. Pray let us hear from some of them.

The agricultural papers are getting up quite a discussion about wire fences. We have much to learn in this country on fencing. *Economy* is an important element in all matters of this sort; and when ornamental, as well as cheap, which I believe they can be, they cannot fail to be widely introduced.

Remarks on Bark-bound Cherry Trees.—Mr. ELLIOTT, as usual, is full of sound sense on this subject. Located, as he is, in one of the most favored fruit soils and climates of North America, he has every opportunity of testing the proper cultivation of fruits. I hope to see this subject pursued

New Remedy for the Curculio.—Very good, my dear Mr. GABRIEL; but where are the "three or four quarts of guano," and the "two bushels of iron shavings, which cost nothing but the carting," to come from, to people beyond reach of guano cargoes, and outside of your New-Haven and other New-England machine shops? No, no. We must have something more "comeatable" than such materials to save those who have nothing of that kind at hand, as ninety-nine of every hundred plum-growers have not. It is gratifying, however, to know that a preventive for the curculio is at hand, for the benefit of those who are able to apply it. I fear an *absolute specific* for this evil is yet far off. Till then, we must apply the pigs, the chickens, and such other remedies as are within reach, and have proved efficacious in their several localities.

Disadvantages of Deep Planting Trees.—I had supposed that no one, be he ever so *green*, in this day of intelligence, would be so stupid as to plant his trees deeper than when in their natural position in the nursery or the field. No man ever ought to plant a lawn, a garden, or an orchard, who is not possessed, in a tolerable degree, of the *practical* knowledge of the growth of trees, unless he can employ one whom he *knows* is a *practical* and a *successful* planter. It is a subject on which, if one once gives his mind to it, the proper knowledge can easily be acquired; and if he chooses to employ every pretender that comes along, why, let him suffer, and buy his wit as he may. Imposters of other kinds, as well as in gardening, are abundant all over the country; and it is an easy matter to find out whether one be good for anything or not before employing him in really responsible operations. If a proprietor chooses to take an easier course, and permit any one to labor for him merely on his own "say-so," he will be sure to earn his wit dear enough before he gets through with his labors.

Wrens the best insect destroyers.—J. J. S. Give me your hand—aye, both of them. I wish I knew your name. You breathe the true spirit of WILSON and AUDUBON, and all others who love the dear little songsters that cheer us with their melody, and relieve us of the thousand pests which mar our pleasure in rural life. How instructive the dear little things in their habitations, and how useful their little labors to any place they occupy. Every body should try to accommodate not only the wrens, but every other bird which feeds on noxious insects, in all parts of his grounds. We know very little of the good that is done by these friendly companions, and palsied be the arm that would lift a thing to destroy them. Some of the sweetest associations of country life are connected with the songs of birds, and their tiny nests, and their habits, and their migrations to and from us, at the time and return of the passing seasons. Tell us more about the birds, my friend. I shall always be obliged to you for manifesting so much kindness of spirit, as well as for the instruction so pleasantly imparted.

Thoughts on the Flower Garden.—A capital extract from the London Quarterly; and given too in the earnest and enthusiastic vein of WALTER SCOTT, or Professor WILSON. And the writer, a right down high tory and churchman too, as every one knows Sir WALTER to have been while living, and the stalwart Professor to be now—may his honest shadow never be less! Puritan as I am, in every pore of my body, I love and admire the honest, hearty, *Kingly* pride of the English, in praise of their own beautiful land. To England are we indebted for the lovliest delineations of rural life and rural scenes, and no where else on earth is

genuine country life so well appreciated and understood as there, barring even the abuses of their systems, both social and political, which carry with them, after all, much that is very good, and for the English themselves, a great deal that is indispensible. Country life can never be properly appreciated unless one has a deep, constitutional, natural love for it. Many affect it, on whom it sits most awkwardly, yet none but those "who are natives there, and to the manner born" can enjoy it in all its beauty, its purity, and devotion.

Nor am I at all sure that if England enjoyed the brighter skies of America, would her people be so deeply imbued with the love of *home*—none but the good old Saxon word gives the idea—as now amid their fogs and damps. A better climate, unquestionably, we have for the development of our fruits and vegetables; but we lack that intuitive love for country life which they possess; and though we can enjoy with less labor, a greater variety of earth's choice productions than they, we are less careful to cultivate them highly. And never, until we study the *philosophy* of English rural life thoroughly, can we possess that high satisfaction which they enjoy in its indulgence. How beautiful the picture which Addison has drawn of Sir Roger De Coverly, amid his ancient trees, his rippling brooks, and his quiet old Hall, seated in the midst of his ancestral acres. And who that has read the delightful sketches of our own Irving on country life in England, but rose from their perusal with an admiration, if he could not fully appreciate it, of the spirit of a people who could give such charms to an austere climate, a dripping sky, and a dim atmosphere? We must yet come to a better understanding of these things in America, before we get all things right.

Vinery at Clinton Point.—A downright sensible structure. Mr. Van Rensselaer has gone into this matter most understandingly. A man of wealth and leisure can have no more elegant indulgencies than are here delineated. The plan seems perfect. Sun, air, protection—all the requisites for the production of perfect fruits are comprised in the mode here described, and as cheap withal, to appearance, as the subject will admit. Can you not, Mr. Editor, ascertain the cost of this structure in its different parts, and give it to us? Such items are a great help to those, yet novices in these affairs, to guide them in their erections.—What kinds of glass are used?—what sizes are the posts? A few hints of expense, &c., are always valuable to us. What is the capacity of production in this vinery, when filled with well matured vines? And cannot grapes thus grown be profitably cultivated for market near our large and wealthy cities? Tons upon tons of the unripened Malaga white grapes are annually imported into our large cities, and sold at 30 to 50 cents the pouund, not to be compared in flavor and appearance to those produced in our cold vineries, where I have often seen them weighing four or five pounds to the bunch. Mr. Allen, of Salem, has treated largely of this subject, but his book is rare, or not at all to be found in many of our towns and villages; and a few practical directions with items of cost would be acceptable to many of your readers. [Perhaps Mr. Van Rensselaer will oblige us with some details. Ed.]

The Mountain Ash as a stock for Pears.—Novel, but not altogether original. This is one of the "Experiences" that I like. Here are *results* curious in themselves, and instructive, but not quite satisfactory; nor can I believe that the ash is the proper stock for growing *reliable* pears. It is exceedingly annoyed at times by the borer, and in a

country where pear stocks can be so easily reared as in ours, the surest way is to follow dame nature and cultivate the fruit on its own bottom.

Saco, in Maine, however, is a high latitude, greatly subject to the blasts of cold northeasterly winds, where the Mountain Ash flourishes in high luxuriance, and the Pear stock may not. If so, by all means let the trial continue, and raise pears on the Mountain Ash if nothing better can be done.

Hints for the Fruit Garden.—Excellent and timely. How many thousands of bushels of choice fruit, after great pains-taking in cultivation, are utterly lost for want of proper materials in gathering and care in preserving them. This article should be well read, and put away for annual reference by every fruit-grower.

Rivers' Nursery.—No doubt a most interesting and beautiful sight. I have often wondered why our nurserymen, many of them men of fine taste in landscape delineation, do not study more of the beautiful, and the picturesque in laying out and planting their grounds. Such dispositions may be made of the different fruit and ornamental trees, shrubbery, and flowering plants, as would make them exceedingly attractive as places of resort, and thereby greatly extend the sales to their proprietors. Let us have a reform in these things, and not have our nurseries, as too many of them now do, look like so many corn-fields or bean patches; but tasteful, inviting, and expressive in part of the purpose for which the plants with which they are occupied, are intended. It is one most interesting feature of this truly delightful profession, that our nurserymen now embrace many men of education, taste and refinement. Let this improvement continue, and by their annual congregation in conventions, and mutual and friendly intercourse, they will ere long arrive at that position which their useful calling should command.

Advertisements.—Right glad was I to see such an array of fruit and ornamental trees on sale in the different nurseries; and what a growing taste in the public do these notices indicate, as compared with thirty years ago, when Messrs. PRINCE and BLOODGOOD of Long Island, were the only prominent nurserymen of this great State. Now, millions of trees are yearly advertised, and millions yearly sold and planted. But how many, think you, of those millions sold and planted, live to bearing and maturity? I hardly dare name twenty-five per cent. of the whole number. Ignorance, carelessness, neglect, are the prolific causes of most of this destruction, while the appropriations of planted grounds to other purposes in a rapidly improving country like ours, particularly in the vicinity of our large towns and villages is another cause. Nurseries therefore, will be kept up, and the increasing taste for cultivating fruits, and ornamental trees, and shrubbery, on the part of the public, will not only sustain, but augment the demand.

Go on, gentlemen nurserymen. No profession among us promises better returns than yours, and may you all be as successful as your merits shall deserve.

JEFFREYS.

ON GRAPE VINE BORDERS.

BY DR. STEVENS, NEW-YORK.

It is well known that plants by repeated pottings, grow with extraordinary energy, and that pots of too large a size, and those not porous, are injurious; that a cutting placed near the inner edge of a pot does better than when placed nearer to the centre; and finally, that a given quantity of earth in a pot will support a much larger plant than the same quantity in an open border. Is it possible to unite the advantages of potting into an open border? This is the problem I propose to discuss, and if possible to solve. On what do the advantages of porous pots depend?

"The natural soil which is most congenial to the growth of the vine, and to the perfection of its fruit, in this country [England] is a light soil, sandy loam, not more than EIGHTEEN INCHES IN DEPTH, on a dry bottom of gravel stone, or rocks."—Hoare, p. 44.

You describe the grape border at Clinton Point, as being nearly 3 feet deep. Is Mr. HOARE's practice wrong? Will it be said, "Make the soil deep enough, if the vines are not benefited by sending their roots deep; they will not be hurt by having a rich, deep border, for they will seek the place which suits them best." Not so; they know their present wants, but do not know their future dangers. They may come so near the surface as to be injured by excess of heat and dryness, or go so deep, as to be out of the reach of due heat during the next spring, or where the water is too abundant and stagnating.

I venture to offer my opinion, that Mr. HOARE's practice is the best for this country, as well as England. At the depth of 3 feet the heat of spring does not penetrate within a shorter period than thirty-two or three days. "If the bulb of a thermometer is buried, for example, 1. m, 3, (i. e. 48 inches,) in the ground, the minimum [of heat] will take place in March, the *maximum* in September; that is to say, two months after the *minimum*, and the maximum in the air."* My own observation of the temperature of the earth below the surface may nearly coincide with those here quoted. The results are greatly affected by the falling of water, its quantity and its temperature.

But although Mr. Hoare's practice seems to me right, his doctrines are by no means correct. "One of the principal causes of grapes not ripening well on an open wall in this country, is the *great depth of mould* in which the vines are suffered to run, which, enticing them to penetrate in search of food below the influence of the sun's rays, supplies them with too great a quantity of moisture." * * *

"It is not mere *earth* that the roots require to come in contact with, but *air* also, which is as necessary to them as to the roots and branches."—p. 45.†

This view of the subject is not correct. The light of the sun's rays does penetrate more than one, or at most, two inches. The heat of those rays affects the soil in 24 hours to the depth of 6 inches, more or less, according to the caloric, porosity, capacity for heat, and conducting power. Trees grow perfectly well in cities with their roots under stone flagging, impermeable to every influence from the sun and air,

* Keamtz Meteorology, p. 206.

† Mr. Hoare deprecates the urging of vines too high when their roots are cold. Might they not be warmed by water artificially heated?

but not of heat. What use do the roots make of air when they get it? Air at the roots of plants is as much out of place as in the stomach and bowels of animals. What little air is about the roots of plants, and in the alimentary canal of animals, is only useful as an agent of decomposition.

The greatest disadvantage of too great depth is the comparative stagnation of the water, which is the vehicle of the food to the roots. This is the disadvantage of oversized pots, and the contrary condition is the source of the advantage of small pots. An animal receives its nourishment by the passage of its food through its stomach and bowels, which have an absorbing surface like the roots of plants; the difference being that the absorbents are on the outside in plants, and on the inside in animals. Animals, it is true, decompose their food. Plants only select it. What constipation is to an animal, stagnancy of water is to a plant—as plants absorb their food as it is brought to them by the movement of water, containing carbonic acid, ammonia,and mineral ingredients. This movement is caused by gravitation when the ground is saturated, and by capillary attraction, which results from the evaporation that takes place from the surface. It is easy enough to convey nourishment in the depth of the earth, but if it stagnates there, it is of no use. The problem, then, resolves itself into this: to promote evaporation, and to convey heat deep in the earth. The mode in which I propose to effect these objects is, to pass porous drains communicating with the external atmosphere through the grape border. To promote evaporation, the air may be made to enter one aperture, and pass out at the other, by elevating one end of the tubes a few feet above the other. The same end may be attained by sinking one or more brick cisterns, laid without mortar, and about 3 feet deep—open of course on the top. In this way I think to give to an open border the most essential advantages of pots.

I need hardly add that the *evaporators* should be closed in winter on the same principle that a vine border is protected by a covering of straw, or muck, or manure. The plan proposed is applicable to other plants beside vines; and while it leaves them the full benefit of heat and evaporation from the surface, gives them a less uncertain supply of both, and more complete security against frost and drouth. In what respect is it better than a border resting upon rocks, stones or gravel? Obviously for the reasons above given, and their protection from cold; and further, because it prevents the great waste of the richness of a border so situated, where a drenching rain leeches the soil, and carries its nutritious principles below the action of capillary attraction, which alone constitutes the difference between the open soil and a leech barrel. It gives in fine, two warming and two evaporating surfaces, instead of one; the artificial surface being in some respects better than the natural.

The nearest approach in nature to the condition of the roots of vines, in the artificial situation in which I would propose to place them, is a vineyard on a hill side with porous rocks, especially such as contain appropriate nutriment. Here there is constantly descending water, no stagnation of it, and withal secured against both drouth and cold in the water and heat which the rocks slowly give out. On a very steep acclivity, many of the advantages I have sought in the plan here sketched, might be attained by a succession of terraces with walls of brick, lime stone, or even sand stone. If the descent should be at as large an angle as 45 degrees, the

evaporating and warming surface would be exactly doubled. Considering how important an agent *bottom heat* is known to be by every gardener, it is remarkable that temperature as affecting the roots of plants in open borders is so little regarded. One of the closing paragraphs of the instructive Diary, furnished by Mr. Johnson, of Lynn, and published in your volume, on fruit, says: "To insure a good crop of grapes, we are satisfied that they must have plenty of heat, plenty of air, plenty of moisture, severe thinning of the branches, severe thinning of the berries." A proper temperature at the roots might have been added. When success has been attained, a due degree of heat has been afforded to the roots by means designed for other objects. Until we know the temperature which the roots of a plant most delight in, we do not know, theoretically at least, the true method of cultivating it in the highest perfection.

As to depth, there is no limit to the degree of it at which the roots of plants may not thrive, save that of drainage and suitable temperature. The roots of the willow go to the surface of deep wells. The vine sends its roots by the side of deep sinks and cess-pools.

Astoria, 24th October, 1849.

P. S.—I have written a long letter; my only object when I sat down was to ask you where I might find minute practical directions for the hybridizing of vines, our native with the foreign, for example.

Remarks. Our esteemed correspondent's remarks on vine borders are highly interesting, but he is somewhat led astray by foreign writers on this subject.

Mr. Hoare's excellent work on the vine is intended for a climate as different from that of the United States, as a dry sponge is from a wet one. The great practical difficulty with the soil in English gardening is, to make it fertile and yet dry—for numberless evils grow out of the accumulation of water in deep soil, in a climate where the sun is not powerful enough to drink up the excess of moisture, or to fully ripen the wood of trees or plants from a more southern temperature.

Here, it is quite the contrary. The sun is so powerful that a grape border of the usual width, only 18 inches deep would soon cease to supply sufficient moisture to grow the finest grapes. The best proof of this is, the fact that at Clinton Point even, with border 3 feet deep, it is found necessary to water the border frequently in mid-summer—lest the vines should suffer for the want of moisture.

Wherever the sub-soil is not sand or gravel so as to afford natural drainage, there Dr. Stevens' plan of thorough draining the borders artificially, is the correct one. But we think every practical grape grower, in this climate, who succeeds in getting large crops of very fine fruit, will agree that deep and rich borders are indispensible, and that Mr. Hoare's system in this respect naturally fails in America.

We find, on examining the admirable meteorological table of the temperature of the soil at Albany, given by Mr. Salisbury, in the State Agricultural Report for last year, that the maximum temperature of the soil 4 feet deep, there is in the month of August. Ed.

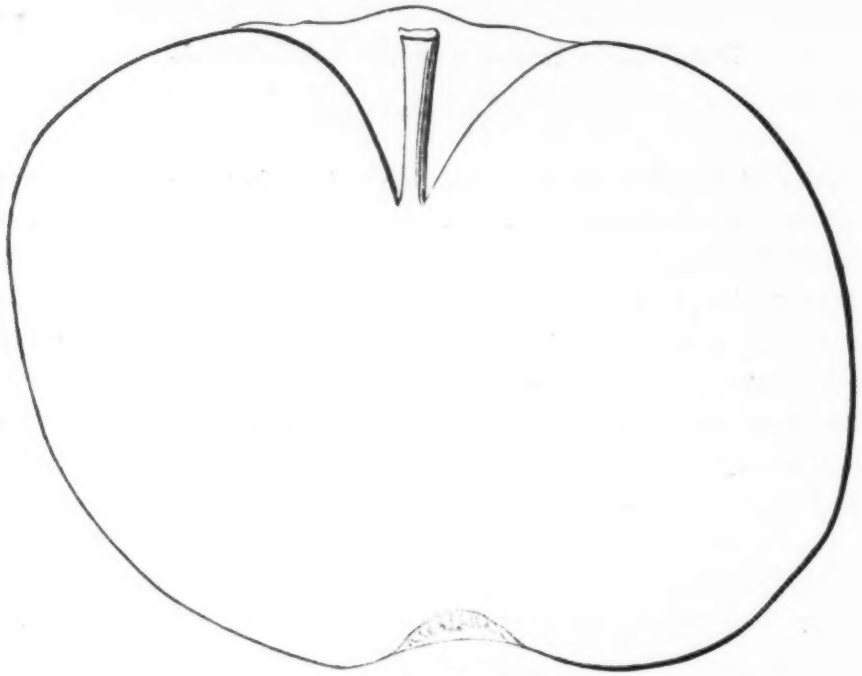
NEW FRUITS OF SOUTH CAROLINA.

BY WM. SUMMER, POMARIA, S. C.

A. J. Downing, Esq.—For fifteen years past I have amused myself with the introduction of many of the best fruits known to American Pomologists. When I commenced, there were but few choice fruits known in our State, and I was forced to throw myself on the veritable honesty of venders of fruit trees. Upon testing many trees, I find that I have been frequently imposed on, and am indebted to your valuable work, "The Fruits and Fruit Trees of America," and its monthly successor, "The Horticulturist," for a key to set me right as to proper names. I have the same fruits frequently under half a dozen different names. I have had the various success attending all beginners, but hope that I have remarked in my experience sufficiently to point out many things hereafter, for those who may follow me, whereby they may avoid difficulties under which I have labored. I hope to be able, at no distant day, to give you an acconnt, from my own observations, of such Northern and European fruits as succeed well in the South, (which we shall be heartily glad to get.—Ed.,) and in order to further the extension of fruit culture in our "sunny land," take the liberty of introducing, through the medium of your journal, a few of my Seedlings, which I have tested, and for our region am satisfied with. I may add, that I have so often been received by descriptions and praises of new fruits, that I am exceedingly loth to claim for my seedlings more than ordinary qualities—but so many of my experiments have turned out as abortive as the attempts of parsons to *raise* steady men out of their sons, that I think I will do no one ill in sending these the choicest results into the world of trees, with my name attached to them; so that if I am mistaken in their excellence, the blame of their sponsorship may rest on me. I have many valuable seedling fruits, but my observations have not been so thorough on some others to venture to make them public.

APPLES.

No. 1. Ferdinand. Came first into bearing in 1848, and has fruited again this season. It was produced by Mr. Adam Minnick, near Pomaria, and I have named it in honor of his father. The fruit is large, oblate, and irregular in shape; colour, pale greenish yellow; basin moderately shallow; calyx open; stalk thick, medium length; flesh creamy yellow, extremely tender. In season from November till March. Its habit is not properly determined, but young grafted trees have fine upright heads, and are of moderately vigorous growth. It is in my opinion destined to become a valuable and indispensible apple for the Southern and Middle States. During the two seasons that it has borne, the fruit has been remarkable for uniformity in size and similarity of appearance. I send you a drawing which is correct, and of natural size.



Ferdinand Apple.

No. 2. Aromatic Carolina. This is a most remarkable apple, originating here, and deserves a place in every collection. It is large oblate-conical, pale red, slightly streaked, with a heavy bloom, wide basin, calyx open. The tree is spreading with horizontal branches inclining to be pendant, short fruit wood, with abrupt terminal buds. The habit of the tree is similar to that of the *Sine qua non*, and once in bearing never requires pruning afterwards. Flesh, exceedingly tender and melting. The flavor is highly *aromatic* and excellent. This is the highest and best flavored apple I have ever tasted. In season, last week in June and all July. It is an abundant bearer, *first rate* quality.

No. 3. Fixlin. Originated here. It is a large apple, oblate, but less conical than the Aromatic Carolina. Beautiful red, streaked, of fine sub-acid flavor. It is a fine drying apple. The tree forms conical heads, with strong horizontal branches, and is a vigorous grower and abundant bearer, producing regular crops of most perfect marketable fruit; begins to ripen in July, and continues maturing its fruit til September. It is a valuable apple for stock, and trees of this variety are hardy and vigorous. The original tree is fifteen years old, and is fully twenty-five feet high. Second rate quality of Southern summer fruit.

PEARS.

No. 4. "Upper Crust." A new seedling pear, which has fruited here the four past seasons, in size and shape much resembling Dearborn's seedling; of a green colour, covered with distinct, irregular russet blotches. The tree is pyramidal in shape, with well matured switchey limbs and grey coloured bark. It is buttery and melting; in season early in July, and ripens well in the house. Its flavor is much superior to any early pear I cultivate, and all who have eaten of it, pronounce it first rate. It is perfectly free from disease so far, and I intend propagating it largely, as I believe it worthy of dissemination, especially in the South.

PEACHES.

No. 5. Mrs. Poinsett. This is a re-

markably fine peach, ripening here latitude 34 deg., on a warm clay soil, from August 1st to August 12th. It is a cross between the Blood cling-stone and some fine variety of yellow free-stone. The stone is very small, and the flesh partially adhesive. It is a heavy bearer with me, and is very hardy. The trunk is erect, with delicate fruit limbs, inclined to be pendant; leaves of pale ashy green, with globose glands, and single at the fruit buds; wood, of light green; fruit large and globular, with a regular suture, terminating in a depression at the bottom end; skin yellowish, inclining on the exposed side to a brownish tint, with traces of red veins over the entire surface; flesh of rich yellow, juicy and melting, and of first rate quality. I have named it in honor of the lady of my friend, the Hon. J. R. Poinsett, who is a devoted friend of horticulture.

No. 6. Poinsett. A prolific cling-stone peach, heavy bearer, and ripening ten days later than the above, of extraordinary size. Trees of strong upright growth, with a peculiar habit of three leaves to the fruit buds. The centre leaf is furnished with globose glands, whilst the side leaves are invariably without glands, and so slightly serrated as to be scarcely perceptible; centre leaves very large; side leaves about one-fourth their size; fruit large, of ruddy yellow colour, roundish oval, with a pointed projection at the end; flesh firm and juicy, of a delightful sub-acid, and one of the best peaches adapted for marketing.

Wm. Summer.

Pomaria, S. C., Nov. 9, 1849.

THE CAMELLIA JAPONICA.

BY GEORGE GLENNY.

(Concluded from the last number.)

THE CAMELLIA HOUSE.

A common greenhouse with a north or east aspect will do for Camellias, though we prefer the south for everything, and a shade to counteract the influence of the sun upon those subjects which did not require it; however, there is less trouble when the aspect is the other way. When it is time to remove the Camellias to the conservatory, or the house in which they are to flower, they must be taken up singly and examined, first, as to the drainage, next as to the form and position of the branches, to see if any should be taken off, or shortened or trimmed in any way. Also some of the branches may require tying a little, one way or the other, to help the shape of the shrub or plant. The surface of the soil may be stirred as low as it can be done without disturbing the fibres, and all that can be loosened may be thrown out, and fresh compost be put on the top, to fill up the pots, which should be cleaned from any mud or dirt that has accumulated on them while out of doors. They may then be placed in the house, giving such ample room, that they shall not only not touch any other plant, but also have plenty of free air; because there is no longer any doubt that to the crowding of the plants in their winter quarters half the evils that assail them may be attributed. They should also be occasionally turned round, to prevent their growing to one-sided specimens, which they soon would if one side only were always to the light. There are many persons who prefer pits to greenhouses for winter quarters; but they are so ornamental, even without their bloom, that most people want them in their greenhouses and conservatories for the sake of their general appearance; and, again, it hastens their bloom. If they are wintered in pits, it is

better to trust entirely to the covering against frost rather than risk fire heat of any kind; but the covering must be effectual, that is to say, thick enough to prevent the frost penetrating. As the buds begin to burst and show colour, they should be removed to where they are to bloom, whether it be in the drawing-room, the conservatory, greenhouse, or other place; and this in a mixed collection, will be from November till April, according to the temperature in which they are kept from the time of first housing them. Nothing can be easier than to keep up a respectable bloom through these months. In general, it will be found that at the end of the autumn, when they have to be housed, there are some much forwarder than others, without any pains having been taken to make them so; in this case, you may make up your mind either to bring them in bloom all together, by placing the forwardest in cold pits, where they will be retarded, and the backward ones into the warmer houses, to bring them forward; or they may all be served alike, and so keep up the long succession of bloom; or they may be still widened in the period of their bloom by putting some of the forwardest where they will be still hastened, and so obtain bloom much earlier than they would come in the ordinary way, although set and swelled earlier.

The varieties of Camellia amount to several hundreds, but very few have attained anything like perfection. The Altheafloras are confused in the centre; the Anemonefloras are little or no better. The only sorts that are worthy at all of cultivation are those which are improvements upon the double white and double red, those of which the petals are symmetrical, whole upon the edge, high in the middle, and approaching to a circular outline. Nevertheless, the plant is in itself handsome, that even a bad flower is passable and will always find its admirers. Colour is a grand object. Stripes and blotches are run after; and these characteristics carry some through a large circle of buyers when they have no other quality but that to save them. Tricolor, a semi-double; Doncklaari, a semi-double; and many others, which have neither form nor substance to recommend them, have nevertheless been purchased at a large price and in great numbers. They look rich as the flower first bursts through its green covering, but are nothing as soon as their flowers are fully developed. The list of the varieties annexed comprises the best and most varied; but it is no use to pretend they are one-half of them good enough to please us.

January.—The plants in pits are to have all the air that can be given on mild days. It is as well to keep them somewhat close in cold winds, but when the weather is pretty calm, the glasses may be wholly removed; but however warm the evening, it should not prevent the necessary precaution of covering up. In the greenhouse, you are necessarily guided by other plants as well as the Camellia; but the more air they can have the better. A little more care must be used when they are being forced, or are put into houses with higher temperature, such as graperies, conservatories, and forcing-houses. Some plants may be properly taken to houses of this description to hasten the flowering. Attend to watering, but do not give them too much; they ought not to be watered until the moisture is greatly lessened; then see that the drainage is good, and water the soil all through, for nothing is so deceptive and so dangerous to plants as to wet the upper part of the soil without soaking it all through. The lessening of the quantity of water in winter time for these and all sorts of plants, is to be by less frequent applications, not by giving a less quantity when they are watered. Grafting may be done this month with plants required to be rapidly propagated, and especially the grafting with a single bud and its wood; and any that indicate a disposition to grow may be done before they get too forward. This applies particularly to sorts with no bloom buds; for having no flowers to take the remaining sap, branches will begin to grow the sooner.

February.—Those plants which are blooming may be placed where they are wanted to flower. If in the drawing-room, or any of the rooms in a dwelling-house, remember that they are to have no fire in the room to alter the temperature, as they will throw off their buds at any sudden check or any rapid excitement. Give air to them in greenhouses and pits as far as you can do it, and be careful that they are

covered from frost at night. If the frost last all day, they ought not to be uncovered, and the greenhouse, although it may require a little heat, must have it carefully administered, as sudden change and too much warmth would cause the buds of the plants to fall, and set them prematurely growing; besides which, all other greenhouse, and especially hard-wooded, plants, are the better for being kept very cool so that there be no frost. Grafting, inarching, or budding may go on partially with all such plants as are not required for bloom, or from which cuttings can be spared for the purpose. The stocks that are starting into growth are the proper ones to use; and by examining the whole of them, there will be no difficulty in finding some upon the move: if not, they should be put into the grapery, or some other house, with a little warmer temperature, and not used till they are started; nor should the grafts be cut off until the stocks are ready for them.

March.—The blooms are now coming out of the early ones, and, as in last month, should be removed to where they are wanted. The conservatory has not a handsomer ornament than the Camellia japonica; and where there is one kept up at all, everything in flower should be taken, but especially this beautiful tribe. Whether it be here or in the dwelling-house, pay due attention to watering which as the buds swell and flowers grow out must be more frequent, guided however by the state of the soil in the pot, and not by the period that may have elapsed since the previous watering. Those in pits require equal attention. As the buds swell, water will be more often required, and the drainage must be well examined, to see that none of the holes at the bottom of the pots are stopped. This, however, is soon indicated by the soil continuing moist when that in the other pots is comparatively dry. As the buds get nearer bursting, the plants should be removed to where they will be seen, and in the height of bloom they ought to be shaded wherever they are, as it will greatly prolong the period of their beauty. This month many will be in perfection. If the stocks are generally shooting, get grafts or buds, for the purpose of taking advantage of the state in which they are most certain of success, for it does not signify half so much whether the bud or graft is moving or not. All the grafted and budded stocks must be placed in the gentle heat as soon as the operation is performed; and as the tops of the stocks are cut off for budgrafting, let them be put in as cuttings, to bring forward as stocks hereafter. While upon the subject of grafting, we may observe that all the shoots which are of no use on the blooming plants may be taken away for the purpose of grafting or budding; so also may long shoots with no bloom be shortened, if it will improve the form of the plant. Weak shoots, which come out here and there on matured plants, and give no hope of future strength to match the rest of the growth, may nevertheless, be good for grafts, as the want of health and strength is generally not in the shoot itself, but at the base from whence it proceeds; and the same little branch on a healthy stock would be as strong as any other. It is at this season, before the shoots have actually begun their growth, that plants should be trimmed into form; only omitting till they have bloomed those which are set for flower, and which may be as ugly and as out of place as any, for it is always desirable to wait for these until the flowering has passed. Cuttings of stocks may be put in. We have recommended two or more eyes—but we are informed that at a nursery in Kent the cuttings are used with only one joint above the surface and none in the ground, so that the under part, from whence the roots start, are not cut to joints at all; but even this can only be desirable when cuttings are very scarce.

April.—The blooming season is now rapidly passing away, and the beauty of the plants fades in one after another. It will be well to look among them to see if there are none that would be better changed to a different sort by grafting or inarching with better kinds; in this case, it depends entirely on the form of the plant whether you work it close down below the branches, or use some of them for the sake of getting a plant sooner. If there be several branches which go out from near the bottom, a piece might be worked pretty close home upon all such as would help to form a good specimen; but as in general the sorts we

should most likely work would be scarce, there would be more likelihood of our having no grafts to work or spare, and the best way would be to work the stock as low down as possible. The whole vigor of the plant is then thrown into the single graft, which grows very strong and pretty rapidly; in fact, very much in proportion to the age and condition of the stock. What we mean by this working of plants that have bloomed, is this:—Perhaps among our collection, we have too many of one sort; the most ugly of these could be thus changed to another. Suppose we find sorts that we do not like; work others upon these stocks. Again; if anybody fancies he should like several sorts upon one plant, the best way then is to cut back all the branches, so as to form a skeleton of a plant, and work each branch pretty close, say from two to six inches, according to their situation, and the form it will make; many will leave part of the old plant to answer for that sort, but it is far better to serve all alike. Some of the favorite plants are bare in parts, but otherwise handsome; this can always be improved by grafting pieces of the same variety on the bare or thin parts of the plant, and thus making new branches where they are wanted. It is in such cases desirable to inarch the new branches, because you can by such means have them of any size that is best adapted for the purpose. See to all the budded and grafted stocks, and prevent the stocks from growing, by rubbing off any buds that may chance to come below the worked part.

May.—The bloom being now virtually over, prepare for the growth of the plants. Shift all of the plants that have filled their pots with roots, without disturbing them any more than you can help; one inch all round will not be too much to increase the size of the new pot over that of the old one. Keep the ball entire; remove the surface a little, and some of the crocks if they will come away without disturbing the roots, but not else. Trim the plants in the form best adapted for making handsome growth. Some branches may require to be stopped by merely removing the end bud; others may want the side shoots, or extremely vigorous shoots, to be shortened or altogether removed; but allowance must be made for the probable growth of each stock, because you must calculate on leaving all on that grows, on account of the bloom always setting at the end of the joints. After shifting and trimming, water, to settle the new soil to the old ball, and place them under glass for a day or two, well shaded, but not uncovered to give air for a time. They may then be placed where they are to grow. This should be in a house or pit, by themselves, where there is little or no change of temperature, not affected by the sun, which must, either by situation or artificial means, be kept from them, except mornings and evenings for a little while; and here their growth should be without a check, which alone causes these plants to become bare of bloom. When grown in perfection, they should set for bloom at every branch. Use all the stocks, and complete all the grafting and inarching; and let all the plants under that operation have a little assistance by way of temperature—fire, or water, or tan heat, to keep them going during the night, and the sun kept off during the kay. Now put in all the cuttings you can make for stocks, by cutting in all the lateral shoots from the unused stocks by you, and by topping them all, and put them into heat as directed. The stocks may be placed in the shade, out of doors, on some hard bottom to prevent the roots striking through the pots into the ground, and worms from getting into the pots. Look well to watering; repot the stocks that are not used for propagation, that they may be kept in good growing condition till wanted.

June.—The bloom finished, do all that has been left undone from last month's directions. Look to all the grafted and budded and inarched plants; wherever they appear united, take the bandages carefully off to examine, and tie again somewhat more loosely. It may be unsafe to trust them without any tie at all, and it impedes their growth to continue the tight bandage on after they have united, Where inarching has been done, the ties of those which appear to be united should be undone and tied up again. You may also cut the grafted branch half way through, towards cutting off altogether, and cut off the portion of stock that is above the graft altogether; but in all these things, regard must

be had to the time the operation has been performed and the appearance of the growth. In untying the bass matting with which the grafts have been bound together, begin so that if you, on taking off two or three turns, find the union not complete, you can make fast again; though in general, if well fitted, in six or eight weeks from the time they are done, they will be found joined well. If the operation is not performed neatly and the joint made to fit very close, it cannot make a good union, and will be much longer in making any union at all. All the plants will require constant attention as to the watering, for while making their growth they absorb a great deal. The stocks must be looked to as well as the worked plants, for although out of doors, and where they can get all the rain, it will not be sufficient moisture, unless it be a very dripping season. Besides, if the drainage is good, three days after a whole month's rain would leave them as dry as if there had only been a day's rain. Therefore, whenever there are plants in the greenhouse, conservatory, or open ground, they must not, on any account lack water, for that is a serious check to the plant, and fatal to the bloom.

July.—The plants have now advanced considerably in their growth, and the early ones, those which bloomed first and began to grow directly, may have completed their growth. This may be known by looking at the new branches; the leaves at the end will be as large as those of the old plants, and a bud terminates the joint or branch. If this bud be double, it is a bloom; if single, some check has prevented it from setting its bloom, want of water or pot room, or sudden change of temperature, or some other cause of a checked growth, has prevailed to the loss of bloom. In this case, let the plant be set out of doors to ripen its wood as soon as possible, and when ripened repot the plant if required, or if the pot be not much crowded with roots at the side, make the same pot do; put it into the propagating house, or a tan pit, or a cool part of the stove, to make its second growth. It is just possible, by these means, to make it set for bloom; and when it has completed its second growth in the stove, let the wood ripen in the greenhouse, or conservatory. But all such plants as have completed their growth this month, and are set for bloom, should be put under canvass to keep off sun; where, however, the fullest air can be given in cloudy weather, and the sides be all open even in the mid-day sun—the roof alone being required to keep off the rays, except morning and evening, before and after the heat has gone. Attend to watering all those which are still making growth, or of which the leaves have not yet attained the full size. Look over the budded, grafted and inarched plants; cut off all the latter that have completed their union, and place them in the shade a little while. Take off all the growing part of the stock, that the whole vigor of it may be thrown into the graft. Release all the bandages from the bud-grafted plants; see that no part of the stock is growing, and all that are united properly may be put together where they may still have the advantage of the tan heat, and of shading by day. Pot off all the struck cuttings into sixty-sized pots, and after keeping them three or four days in the moderate heat of the propagating house, or of a declining hot-bed, let them be placed in a cold frame where they can be well watered, shaded, covered close in bad weather, and thrown open in mild, and there they may remain till the autumn, when they will have filled their pots with roots, and require to be potted into those of a larger size; or, if room be an object, they may remain in the same until the growing time in the spring. Look well now to the disposal of all the collection; for every plant will have completed its growth by the end of the month or the beginning of the next. In the event of not being able to put the plants under canvass, or in good deep pits, and of being forced to place them in the open garden. look out for the most sheltered place, where the mid-day sun will not reach them; or, if there be no such place, the sun must be kept off by artificial means.

August.—Little more is required this month than attention to watering, and turning such of the plants in the open ground as might otherwise grow through the pot and strike into the ground, which would greatly excite them in their season for resting, and give them such a check on removal as would effectually spoil them for

a season. The grafted and otherwise worked plants may be growing, or at rest, or, some each; for there is no answering for things put out of their way. Some of the bud-grafts will be growing rapidly, and these ought not to be removed from the propagating house; those which are evidently at rest should be placed in a cool situation, and be kept much more dry than the plants that are growing. It is however, not unusual to force the grafted plants into growth as early as possible, to get a second growth out of them if practicable. If this be the object, let the ball be examined; and if the roots have reached the side of the pot, shift them, and replace them in the propagating house, or a cool part of the stove. Generally, however, where the plants are at best, it is better to keep them so by placing them in a cool pit, and shading them from the extreme heat of the sun. If, however, any of them start into growth, encourage it by removing the plant into the greenhouse, where it will be more protected than it is desirable to keep those which are at rest and want coolness and plenty of air. This should also be done with all such of the plants in the collection as commence growing, for unless it be encouraged the plant will be damaged; the new growth not being matured, will perhaps, receive a check from cold winds while exposed to the open air. It is better therefore to remove it into the greenhouse, conservatory, or even into the dwelling-house, if you cannot find room in the stove or propagating-house, and it will be urged forward enough, perhaps to set for bloom, and if not, to keep the growth healthy, and the foliage perfect, that would otherwise have been subject to blight or the attack of the fly or other pests, and so have been spoiled so much as to cause it all to be cut back.

September.—The buds have now swelled a good deal, and where they are too thick they should be thinned; two blooms should nol be allowed together, one would spoil the other, or both would be spoiled, besides in nowise contributing to the beauty of a plant, even if both would grow and bloom perfect. The buds should not be nearer than four inches apart; but at the ends, where many varieties will set three or four buds in a bunch, only one should be left, and that ought to be the most perfect and in the best position, It is now time to remove them to their winter quarters; some into the conservatory, some into the greenhouse, some in pits, according to their ultimate destination; all these intended to be thrown into flower early should be removed to the greenhouse, preparatory to going into the forcing house, vinery, or stove, wherever they are to be forced; but unless there be some especial object in very early flowers, it is better to keep them in their season, and to be content with the natural forwardness of some which will be always found to precede the main body of them, Place all the stocks in frames, for they are as well there as anywhere, and only require to be covered in very severe weather for the single and semi-double varieties are for the most part much hardier than the double or highly fancy kinds. Water must be given now sparingly, and the drainage well examined before they are put in their winter quarters. Give all plants under glass abundance of room; pot off all struck cuttings not already done.

October.—Little is now wanted but watching, and when really necessary, watering, but this can be only seldom, during the present month and next. The preceding remarks as to the treatment of the worked plants applies all through the winter. If they begin to grow, encourage them by taking them into the propagating house, and as the buds of established plants are now swelling, they must not be allowed to flag for want of water, although they must by no means be kept wet. Turn all the plants in the houses, so that they do not grow one-sided, for they would soon be spoiled if the light were only to come to one side of them, which is the case in almost all houses.

November.—This month requires only a continuance of last month's management, because the plants are only here and there throwing out an odd flower, unless regular forcing is going on, in which case a succession must be taken into the warmer house, and the places of those removed when forward enough must be occupied with the flowering plants that are to succeed them. They are always better removed

from the warmth when the buds first show colour, and allowed to open their flowers in the greenhouse or conservatory, as they then last much longer in perfection.

DECEMBER.—Continue as before directed and as mentioned in January, for the season is occasionally a month forwarder or backwarder, and the December and January months differ but little. When we observe that the season itself frequently changes places with the months, and the last and first differ but little; all the caution against frost and damp (the possible changes) required, are just as likely to be wanted in December as January, and in January as December.

PROPERTIES OF THE CAMELLIA.

The Flower.—1. The flower should be circular on the outside, when looked at in front.

2. The petals should be thick, smooth at the edges, broad and blunt outside, cupped or reflexed, as the case may be.

3. The petals should be imbricated (that is, each should have its centre over the joint of the under petals); each row of petals should be smaller than the row immediately under it.

4. The number of rows, one above the other, should form the flower into half a globe.

5. The colour should be alike all over, the flower, if a self; and if blotched or striped, the contrast of the colours should be striking.

6. If the flower be white, it should be pure; and if white and coloured in mixture, the white should be distinct, and the outline of a blotch or stripe, where the white and colour joins, should be very decided.

The Plant.—1. The foliage should be large and bright, the leaves close together, the joints short, and habit bushy.

2. The flowers should come singly and at the ends of shoots, so as to bloom free from the leaves.

Long straggling joints, like the species called *reticulata*, are objectionable; foliage dull and small like that of the same kind, is also detrimental to the appearance, and therefore forms another objection; rough ragged blooms, however large and showy, are a great drawback, hence *reticulata* possesses a third very objectionable character. and no plant was ever more overrated, Pointed petals, like those of *Eximia*, are greatly against a flower, and in this case spoil a variety which has many other beautiful properties; open ragged-looking flowers like *Doncklaari*, however striking, are bad; and we may safely say, that there is no class of flowers, of which even the best, or rather the most esteemed varieties, are capable of so much improvement.

GENERAL REMARKS.

The *Camellia japonica* can be propagated every month in the year by cuttings. Stocks therefore, may be always kept in all sorts of stages. We have given general directions for each month, but the growing or resting of the plant can be almost commanded at pleasure, and the only necessary condition of grafting, budding, or inarching, is that the stock shall be growing, and the nearer it is used to the commencement of its starting the better. Experience, convenience, means, and other circumstances, may dictate various expedients, and drive us from proper to improper seasons, but the foregoing directions have been founded on management which produced healthy, vigorous, and well-blooming plants in our own hands, and there can be no doubt, that although other modes may succeed, this cannot fail.

SELECT VARIETIES.

Flowers in the style of Imbricata.—Adelaide, a verp deep red; Agnesi, bright rose; Alba Fenestrata, pure white; Amabilis, a rosy carmine, occasionally speckled with white; Beali, *alias* Leeana Superb, vivid red; Byzantina, rose spotted with white; Duchesse d'Orleans. white tinted or spotted with rose; Hendersoni, *alias* Lombardi; Jacksoni, or Landreethii, delicate rose, bleaching towards the centre; Imbricata, rosy carmine; Minuta, rich cherry rose; Palmer's Perfection, beautiful carmine; Prattii, fine large brigh rose; Pulcherrima, a rich dark red; Queen of England, delicate rose, striped with white; Sarniensis: a beautiful carmine; Sherwoodi, a bright cherry color; Sulcata, *alias* Belle Irene, white, with pale stripe in the centre of each petal; Venere, brilliant red; Wallichi, rich carmine.

Flowers in the style of the old double White.—Apollo, a transparent rose; Aurora, a salmon rose, marbled with white; Calypso, pure white; Brochii, cherry rose, striped with white; Candidissima, pure white; Cœlestina, delicate rose; Coquettii, salmon rose, suffused with white spots; Cooperi, reddish salmon; Elegans, very large, and sometimes marbled with white; Estherii, white, with rose flakes; Fordi, salmon rose; Grunelli, pure white; Harrisoni, pure white; Helena, deep poppy red; Henri Favre, bright cherry rose; Hookeri, pomegranate colour, spotted white; Imbricata Alba, creamy white striped with rose; Marchioness of Exeter, beautiful rose; Marguerite Gouillon, blush rose, striped and spotted with carmine; Mutabilis Traversi, bronzy salmon, with white stripes; Negri, carnation colour, spotted with red; Ochroleuca, creamy white, with buff centre; Palatinus Hungaricus, red, suffused with rose and white spots; Queen Victoria, reddish carmine, striped with white; Rudolphi, white, with broad blood-coloured stripes; Susannah, blush rose, shaded with salmon, and striped with carmine; Woodsii, fine rose; Wardi, brilliant red; Carswelliana, salmon red, striped with white.

NEW SEEDLING.

Countess of Orkney, very noble flower, not fully double, brilliantly striped with pale rose and deep crimson; outline, very good, and the flower beautiful in all its stages, free grown, rich foliage and good habit.

ON INDIAN CORN.

BY THOMAS CARLYLE.

[The following article by Thomas Carlyle is from Frazer's Magazine. Our readers will find an interest in it, besides what belongs to productions from the pen of the author of Sartor and the French Revolution, Ed.]

"It is much to be regretted that no individual of the many large classes whose business and interest it might seem to be, has yet taken any effective steps towards opening to our population the immense resource of Indian corn as an article of food. To all that have well considered it, this grain seems likely henceforth to be the staff of life for over-crowded Europe; capable not only of replacing the deceased potato which has now left us, but of infinitely surpassing in usefulness and cheapness all that the potato ever was.

"From general attainability, there was no article of food ever comparable to it before; a grown man, in any part of Europe accessible by sea, can be supported on it, at this date, wholesomely, and, if we understand the business, even agreeably, at the rate of little more than a penny a day; which surely is cheap enough. Neither, as the article is not grown at home, and can be procured only by commerce, need political economists dread new 'Irish difficulties,' from the cheapness of it. Nor is there danger for unlimited periods yet, of its becoming dearer; it grows in the warm latitudes of the earth, profusely with the whole impulse of the sun; can grow over huge tracts and continents lying vacant hitherto, festering hitherto as pestiferous jungles, yielding only rattle-snakes and yellow fever; it is possible, if we were driven to it, the planet Earth, sown, where fit, with Indian corn, might produce a million times as much food as it now does, or has ever done! To the disconsolate Malthusian, this grain ought to be a sovereign comfort. In the single valley of Mississippi alone, were the rest of the earth all lying fallow, there could Indian corn enough be grown to support the whole posterity of Adam now alive; let the disconsolate Malthusian fling his 'geometrical series' into the corner; assist wisely in the 'free trade movement;' and dry up his tears. For a thousand years or two, there is decidedly no danger of our wanting food, if we do not want good sense and industry first. In a word, this invaluable foreign corn is not only calculated, as we said, to replace the defunct potato, but to surpass it a thousand fold in benefit for man; and

if the death of the potato has been the means of awakening us to such an immeasurable superior resource, we shall, in addition to our sorrowful Irish reasons, have many joyful English, European, American and universal reasons to thank Heaven that the potato has been so kind as to die.

"In the mean while, though extensively employed in the British Islands within these three years, Indian corn cannot be said to have come into use; for only the bungled counterfeit of it is hitherto in use; which may be well called not the use of Indian corn, but the abuse of it. Government did, indeed, on the first failure of the potato, send abroad printed papers about the cooking of this article, for behoof of the poor; and once, I recollect, there circulated in all the newspapers, for some weeks, promulgated by some 'Peace Missionary,' a set of flowery prophetic recipes for making Indian meal into most palatable puddings, with 'quarts of cream,' six eggs well whipt, &c.—ingredients out of which the British female intellect used to make tolerable puddings even without Indian meal, and by recipes of its own! Those recipes were circulated among the population—of little or no value, I now find, even as recipes; but in the mean while there was this fatal omission made, that no Indian meal on fair terms, and no good Indian meal on any terms at all, was, or is yet attainable among us to try by any recipe. In that unfortunate condition, I say, matters still remain.

"The actual value of Indian meal by retail, with a free demand, is about one penny per pound; or with a poor demand, as was inevitable at first, but need not have been necessary long, let us say three half-pence a pound, The London shops, two years ago, on extensive inquiry, were not found to yield any of it under three pence a pound—the price of wheaten flour; somewhere between twice and thrice times the cost of Indian meal. But further, and worse, all the Indian meal so purchaseable was found to have a *bitter* fusty taste in it; which, after multiplied experiments, was not eradicable by any cookery, though continued boiling in clear water did abate it considerably. Our approved method of cookery came at last to be, that of making the meal with either hot or cold water into a thick batter, and boiling it, tied up in a linen cloth or set in a crockery shape, for four or sometimes seven hours, which produced a thick handsome looking pudding; such as one might have hoped would prove very eligible for eating instead of potatoes along with meat. Hope, however, did not correspond with experience. This handsome looking pudding combined readily with any kind of sauce, sweet, spicy, oleaginous; but except the old tang of bitterness, it had little taste of its own; and along with meat 'it could,' like Charles of Sweden's bread, 'be eaten,' but was never good, at best was barely endurable.

"Yet the Americans praised their Indian meal; celebrated its sapid excellencies, and in magazine novels, as we could see, 'lyrically recognised' them. Where could the error lie? This meal of a beautiful golden color, equably ground into fine hard powder, and without speck or admixture of any kind, seemed to the sight, the feel and the smell, faultless; only to the taste was there ineradicable final bitterness, which in bad samples even made the throat smart; and, as the meal seemed otherwise tasteless, acquired for it, from unpatriotic mockers among us, the name of 'soot and sawdust meal.' American friends at last informed us that the meal was *fusty*, spoiled; that Indian meal especially in warm weather, did not keep sweet above a few weeks; that we ought to procure Indian corn and have it ground ourselves. Indian corn was accordingly procured, with difficulty, from the eastern city regions, and with no better result, nay, with a worse. How old the corn might be, we, of course, knew only by testimony not above suspicion; perhaps it was corn of the *second* year in bond; but at all events the meal of it was too bitter; and the new evil was added of an intolerable mixture of *sand*; which, on reflection, was discovered to proceed from the English mill-stones, too soft for this new substance, could not grind it, could only grind themselves and it, and so produce a mixture of meal and sand. Soot-and-sawdust meal, with the addition of brayed flint; there was plainly no standing this. I had to take farewell of this Indian meal experiment; my poor patriotic attempt to learn eating

the new food of mankind, had to terminate here. My molendiary resources (as you who read my name will laughingly admit) were small; my individual need of meal was small; in fine, my stock of patience too was done.

"This being the condition under which Indian meal is hitherto known to the British population, no wonder they have little love for it, no wonder it has got a bad name among them! 'Soot-and-sawdust meal, with the admixture of brayed flint;' this is not a thing to fall in love with; nothing but starvation can reconcile a man to this. The starving Irish paupers, we accordingly find, do but eat and curse; complain loudly that their meal is unwholesome; that it is bad and bitter; that it is this and that—to all which there is little heed paid, and the official person has to answer with a shrug of the shoulders. In the unwholesomeness, except, perhaps for defect of boiling, I do not at all believe; but as to the bitter, uncooked unpalatability, my evidence is complete.

"Well, three days ago, I received, direct from the barn of an American friend, as it was stowed there last autumn, a small barrel of Indian corn in the natural state; large ears or cobs of corn merely stript of its loose leaves. On each ear, which is of obelisk shape, about the size of a large, thick, truncated carrot, there are, perhap, about five-hundred grains arranged in close order in their eight columns; the color gold yellow, or, in some cases, with a flecker of blood-red. These grains need to be rubbed off, and ground by some rational miller, whose millstones are hard enough for the work; that is all the secret of preparing them. And here comes the important point. This grain, I now for the first time find, is *sweet*, among the sweetest; with an excellent rich tasts, something like that of nuts; indeed, it seems to me, probably from novelty in part decidedly sweeter than wheat or any other grain I have ever tasted. So that it would appear that all our experiments hitherto on Indian meal have been vitiated to the heart by a deadly original sin, or fundamental falsity to start with; as if experimenting on Westphalia ham, all the ham hitherto presented us for trial had been in a *rancid* state. The difference between ham and rancid ham, M. Soyer well known, is considerable! *This* is the difference, however, this highly considerable one, we have encountered hitherto in all our experiences of Indian meal. Ground by a reasonable miller, who grinds only it, and not his millstones along with it, this grain, I can already promise, will make cleanly, wholesome and palatable eating; and be fit for the cook's art under all manner of conditions; ready to combine with whatever judicious condiment, and reward well whatever wise treatment he applies to it; and, indeed, on the whole, I should say, a more promising article could not well be submitted to him if his art is really a useful one.

"These facts, in a time of potato failures, apprehension of want, and occasional fits of wide spread, too-authentic want and famine, when M. Soyer has to set about concocting miraculously cheap soup, and the Government to make enormous grants and rates-in-aid, seem to me of a decidedly comfortable kind; well deserving practical investigation by the European Soyer, government, mendicity societies, poor-law boards, friends of distressed needle-women and friends of the human species who are often sadly in alarm as to the 'food prospects' and who have here, if they will clear the entrance, a most extensive harbor of refuge.

Practical English enterprise, independent of benevolence, might now find, and will by and by have to find, in reference to this foreign article of food, an immense development. And as for specially benevolent bodies of men, whose grand text is the 'food prospects,' they. I must declare, are wandering in darkness with broad day beside them, till they teach us to get Indian meal, such as our American cousins get, that we may eat it with thanks to heaven as they do.—New food, whole continents of food; and not rancid ham, but the actual sound Westphalia! To this consummation we must come; there is no other harbor of refuge for hungry human population; but all the distressed population fleets and disconsolate Malthusian of the world may ride there; and surely it is great pity the entrance were not cleared a little, and a few buoys set up and soundings taken by competent persons. C.

DOMESTIC NOTICES.

REMARKS ON SOME DWARF BEANS.—*Dear Sir*: The venerable PHILIP MILLER, nearly a century ago, pointed out in his "Gardener's Kalender," the advantages "those gentlemen who lived in the country" derive through being enabled "to make choice of such fruits and esculent plants as will be in season at a particular time of the year." In these commercial, money-making days, not only "those gentlemen," but the horticultural public generally, are interested in making the acquaintance of the properties and qualities of esculent plants and fruits. Whoever aids in extending this acquaintance, I deem to be useful—no matter how slight or how trivial his exertions may be. Under this impression, I sent you the result of a small experiment on the comparative earliness of some kinds of Peas. You also thought it useful, and published it—this encourages me to offer you another on some dwarf Beans.

I sowed two rows of each of the following kinds, "side by side," on the 24th of May, they were ready for use in the following order:—

1. Early Mohawk, ... July 6.
2. Early Six Weeks, or Dun Bean, do. 8.
3. China Red Eyed, ... do. 10.
4. Early Valentine, ... July 10.
5. Late Valentine, or Refugee,... do. 14.
6. Royal Dwarf,..... do. 14.

Early Mohawk is a full sized bean, of a light brown color, profusely covered by brownish purple blotches—its earliness is its best recommendation. *Early Six Weeks*, full sized—of a dull cream color, and a good bearer. *China Red Eyed*, small bean, white—red about the "eye," comparatively productive. The pods are very slender and handsome and the plant dwarf, soon dying out, thereby rendering a useful kind where another crop is required immediately to succeed. *Early Valentine*, bean middle-sized, light brown—nearly covered with very pale purple blotches. This is a very popular bean for general use, and, I opine, deservedly so. *Late Valentine*, bean small, dull white—profusely covered with deep purple blotches,—pod small, generally streaked with purple while green. It possesses a valuable property in being a continual bearer—at the end of September it bore many green and tender enough for use. *Royal Dwarf*, large white bean, plant of a robust thickset habit of growth. Though the latest, it is the best kind for producing a great weight of seed.

With these, I also sowed the *White Dwarf*, *Mexican Black*, and some other kinds, from the United States Patent Office. The two former proved to be running beans to a certain extent. I have therefore refrained from making any comparative remarks on them. They are not, however, true running beans. I would make of them a third, or intermediate class, including the *Late Valentine* from the true dwarfs. Such a class might be termed "Running Dwarf beans." Their distinctive character from dwarfs, would be continual bearing, and their distinctive treatment, deeper soil, and an occasional cutting back of their straggling shoots. The beans from the U. S. Patent Office, were named respectively "Red Bean" "Speckled Bean," and "Small Chilian Bean." Either from being old seed, or from having been injured by a long voyage from a foreign climate, which is possible,—or from having been ripened in a different climate from that in which they were sowed, which I think probable,—or more probably from all three causes combined, they have but just made their appearance through the soil—too late to be of any service. They were very large and handsome beans,—and, I think, can they be successfully cultivated we shall be indebted to the Patent Office for a very useful introduction.

Would the Editor encourage me to inquire of the readers of the Horticulturist, whether any person has been more successful than I with them? I am, Sir, Very respectfully yours, *Thomas Meehan, Rosedale, Kingsessing, Philadelphia.*

.....

SPECIAL MANURES.—Your timely article in the last number of your valuable paper—upon the *falling leaves* for enriching the soil, prevented my burning a large quantity.

I had thought of their virtue but supposed I would gain by destroying the embryo insects which I thought to abound on them, secreted for another spring sun's warmth.

I have gathered them and put them three to four inches deep, on an asparagus bed, and then covered them (to prevent the wind's blowing them off,) by well rotted manure; next spring, (from the warm and sure protection from the winter's frost) I look for an early and healthy return for my labor.

In the spring I shall dig them in—and the soil will be truly enriched. [We trust you have included in the dressing, the tops of the asparagus itself. ED.]

This has not been the first suggestion heeded from your paper.

After having the "Old Digger's" article published in our Democrat, in common with several, I made a bed after his plan, and find my vines well rooted. I put the "Rival Hudson," Burr's "New Pine," "Early Scarlet," "Hovey's," and some new seedlings from E. & Barry's, in the bed.—The success it will do to report upon hereafter. If the plan succeeds well, due credit will be given to your good hearted correspondent.

I am sorry to say that our apple crop is very poor this year.

The fruit which we have is imperfect—Strawberries, plums, pears, cherries, and quinces, have

done well, and the best Virgalieu and Bartlett pears, I have seen the past season. Was it not for *blight* we could supply large quantities of pears. Many trees have died within two years, and as many as 100 in one gentleman's garden that I know of. The Northern Spy, and Norton's Melon apple are extremely short, and I fear good samples are not to be had. Among strange things, we are importing apples from Canada, fine Pomme Gris, Spitzenbergs, Rhode Island Greenings, Golden and Roxbury Russets, have been brought over from there. If *they*, the Canadas are to be annexed, we shall be more glad to welcome them with *good fruit*. Truly, *James H. Watts. Rochester, Monroe Co., N. Y*

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Improvement of the Soil.—*Dear Sir:* I beg to offer a few remarks on the improvement of the soil. Too much cannot be said to impress the importance of ameliorating the soil on the minds of all who own an acre of land, especially to the gardening class, whose success depends so much upon it. In many instances, how often you will find amateurs, and even gardeners complain that certain vegetables will not do here, or that worms always destroy certain others, and that others again are affected by blight and do no good. All this is in no way to be wondered at, when we consider the unimproved state in which the ground is in, perhaps never having been dug more than six or eight inches deep. This is the main cause of all such failures, because the roots have no depth of soil to work in. Therefore, the importance of deep culture, I would recommend all to trench as much of their garden ground every winter as they can, to the depth of two to four feet, as their soil and time will allow, turning the surface to the bottom and bringing the bottom to the top, leaving it in rough ridges, with as much surface as possible. Ridge-up also, all that you have not time to trench, and dig the remainder, sending the spade in its full depth, and thoroughly turning it up from the bottom. Do not content yourself with the common idea that little can be done in the garden in winter. In my opinion, it is the most valuable season of the year, embrace every frosty morning, and fork over the ground previously trenched, ridged or dug, turning up the frozen surface, and loosening up the soil below to the action of the weather. Thus continuing, you destroy the thousands of insects that are harbored therein, and which in their course devour your crops. You also gain a great depth of well pulverised and sweetened soil, in which your crops will flourish in excellent health, as well as be far more wholesome to the consumer; besides, should the season prove dry, you have such a depth of soil that no continuance of dry weather will affect it, and should it prove wet, there is the same extent for the moisture. By pursuing this method, you will in a few years have your ground in an excellent state of cultivation, and much greater success will attend your culture of fruits as well as vegetables. Manuring is of course highly essential, and to be understood as accompanying trenching. I also find very valuable results from charred materials, which I get by collecting all refuse from the garden, and all that I can procure here and there, in the shape of wood, brush or rubbish. When I have enough together, I start a good body of fire, on which I put layers of wood, clay or earth, sods, and all the general rubbish, lastly covering it up with soil, to prevent any outbreak. In a week or two, it will be all completely charred and fit for use, this I apply on the ground, (which is made beautifully mellow) in as hot and dry a state as possible; thoroughly intermixing it with three-tined forks, which is far better than the usual way of digging in with a spade; of such charred heaps endeavor to have as many of them throughout the year as you can. Never allow the untidy appearance of any rubbish, or the unwholesome smell of decaying matter, when you can by such a process turn it into valuable manure. Another valuable end might be gained by turning your attention to the great amount of bones that might be gathered in the woods, and if you have not the means of grinding or dissolving them, just turn them into the bottom of the trenches they will decay in time, and as fast will the roots of young fruits or vegetables feed upon them. *James Stewart. Memphie, Tennessee.*

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Fruits in Mississippi.—*Dear Sir:* After eight years' experience in the cultivation of fruits in Amite county, Miss., lat. 31°, I will give you the results. My land is rolling, light loam with red clay subsoil, contains very little lime. Spring water of the purest free stone. The lands around me have very much the appearance of that near Washington City.

I purchased my trees at Cincinnati, Ohio, and at Vicksburg, Miss. The trees from Vicksburg do much better than those from Cincinnati; I have lost a great many of the western Ohio trees, they seem to become diseased near the surface of the ground or in the roots; I was very careful in setting them out—I put them thirty feet apart, in holes from four to six feet square and eighteen inches deep; I filled the holes about half full of rich soil from the forest, placed the tree in the proper position, then drove down a stake, tied the tree to it with a piece of strong cloth, putting a handful of straw between to prevent the bark being rubbed off, I then filled the hole with rich mould, and trampled down, leaving the top as level as possible, and finished by putting some straw or leaves around each tree to preserve moisture during summer. I have my orchard plowed and harrowed once or twice a year, and weeds, &c., kept down. I use lime and ashes around my trees every spring.

I find that your fall and winter varieties ripen here in summer. All of the early kinds do well; and I have a number of summer apples, but only

one or two winter varieties. My apples rot very much about the time of ripening, particularly if there is much showery weather with hot sun. Below are the names of such as prove to be adapted to my soil and latitude, viz:

Apples—Davis—Medium size green apple; ripens in Winter, keeps till April.

Grindstone—A very good winter apple; healthy tree.

Horse Apple—Large yellow; ripens in July; certain bearer.

Bevan—Early summer; a very thrifty healthy tree.

Holland Pippin—A certain bearer; ripens in July and August.

Maiden's Blush—Ripens in August; a hardy tree.

Terry's Red Streak Striped—Ripens 1st Sept.; healthy tree.

White Bellefleur—Ripens in summer and hardy tree.

Golden Russett—Ripens in September.

Early Harvest—A certain bearer; ripens 1st of July.

All of the early apples do finely.

P. ars—The Bartlett fruits well, is the healthiest tree, and bears very young, and ripens in August.

Surpass Virgalieu—Fruits well and young; ripens in September; hardy tree.

These two are the only kinds that I could recommend, as my other trees have not fruited. There are three of them that seem to be very healthy trees, the Hericart, Jargonelle and Julienne. The early Catharine has not fruited (now 8 years since planted) and is very much affected by the blight every summer, a great many of the limbs die, but the body looks healthy.

All kinds of peaches do well where proper attention is given; they are very much troubled by the curculio and grub.

Keeping a few hogs in the orchard is one of the best remedies; you see a great difference the second year after putting them in.

I have two very fine young fig trees, (the large Blue and yellow Smyrna) which have been killed to the ground every winter, being at the time from eight to ten feet high. Can you inform me how to prevent it? [Yes. It is only necessary in your latitude to *shade* them in winter. Ed.] Very respectfully yours, *E. J. Capell. Centreville, Amite Co., Miss., Oct.* 13, 1849.

P. S. The apples above named were selected out of 45 varieties growing in my orchard.

Out of 13 kinds of pears, those mentioned are the best for this latitude and soil.

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Pryor's Red Apple.—*Sir:* I noticed in your journal, vol., 2nd, page 18, a figure and description of the Pryor Red apple, by Mr. Byram of Kentucky. The caption of the article would lead me to suppose that it was a western apple, but as a Virginian, I wish to claim what properly belongs to Virginia. For authority, I insert Mr. I Sitlington's name, of Highland City, Va., an aged and respectable gentleman, who has been acquainted with the apple for many years, and says it originated some seventy years since, in Botetourt Co., of this State, and was originally known by the name of Pitzerhill apple, from its having originated on a considerable eminence on Pitzer's farm, hence the combination of Pitzer and Hill. Afterwards it received the name of Bighill, from its situation at the time of origin, and previous, (agreeable to Mr. Sitlington's statement) to Mr. Pryor coming in possession of the farm. The description by Mr. Byram would be more complete (if agreeable to pomological rules,) to insert thick skin and of the peculiar very acute angles which the branches sometimes forms. Yours respectfully, *Wm. Rice. Bridgewater, Va., Nov.* 14, 1849.

[Please let us have specimens for comparison. Ed.]

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Description of the Clay Hall Seedling Grape.—*A. J. Downing, Esq.:* According to promise, I now send you a description of the "*Clay Hall Seedling*" Grape, having lately received a communication from Mr. Alexander Murdock, gardener at Clay Hall, County of Norfolk, the seat of T. Buckworth, Esq. Mr. Murdock, writes me, that in 1828 he fertilised a Bunch of Muscadine, (the *White Chasselas of the U. S.*) with the pollen of the *Black Lombardy*, that produced the above very desirable variety.

The most remarkable feature in this grape is the perfect demarkation of the *berry* in colour, *the one half* being perfectly *white*, and the *other half perfectly black*. The coloring is not "run," or blended, as Grizzly Frontignan, or Aleppo, which varieties are not half so well defined in the colour of the berry as the *Clay Hall Seedling*. The great merits this variety possesses, are its good forcing properties, and its being *very prolific*; its adaptation for pot culture, and all situations where grapes are forced early, will also give great satisfaction.

The following are the characteristics of Clay Hall Seedling: quality, first rate; form of berry, perfectly round; colour, *half the berry white, half black;* leaf rather small, and of a bright, shining colour, and of the darkest green; wood, pale brown, short-jointed, and of only moderately strong growth; size of bunch, medium; size of the berry, same as that of White Frontignan. This variety, although originated so long ago, has been confined to the neighborhood in which it was originated; and had it not been for its excellence in forcing, might have been probably overlooked altogether; as its size, and not very robust habit, would have condemned it for late vineries, when such sorts as Reine du Reice, Cannon Hall Muscat, and Muscat Eschalota, and White Neice, were to be had; as these varieties combined size and flavor, and are very prolific. I shall import some plants this fall, when I shall take pleasure

in presenting you a plant, feeling quite satisfied that you will be pleased with it. [We shall be much obliged. Ed.] Yours truly, *James Stewart. 5th st.. and N. Y. Avenue, Washington, D. C. Nov.* 1849.

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Green-house plants and Gardeners.—*Sir:* Your readers will perhaps recollect that the bearing of my former letters was (partly) to the effect that light and air are as necessary to give vigorous vegetation, as food is to sustain animal life. I have shown in a former number, (page 145) the injurious effect that strong light has upon plants under glass; also the remedy most suitable to counteract it, and aid in the healthy development of their various organs. Air is as essential to plants as light. Liebig says, that by loosening the soil that surrounds young plants we favor the access of air, and the formation of carbonic acid; and that the quantity of their food is diminished by every difficulty that opposes the renewal of air; and that placed in a closed vessel in which the air, (and therefore the carbonic acid) cannot be renewed, a plant dies exactly as it would in the vacuum of an air pump, or in an atmosphere of nitrogen or carbonic acid, even though its roots be fixed in the richest mould. The same author further adds that all plants die if placed in soils and water which contain no oxygen. Absence of air acts exactly in the same manner as an excess of carbonic acid. This theory is sufficiently explicit as to the importance of air to plants. Their food consisting of inorganic substances, such as carbon, nitrogen, oxygen, ammonia, &c., &c., and the air being impregnated with or composed of these various substances, its exclusion, particularly in day light, will be injurious to vegetation. On the other hand, such a draft of dry air as is often produced by throwing doors and windows on all sides, open in very dry weather, or during parching cold winds, will rob plants of their water as well as intense light; besides, it not unfrequently changes the sepals of undeveloped flower-buds and scales that protect the growing points, of evergreen plants from their usual colour, to that blighted or black appearance so often observed in Camellias and other plants. This is also caused by keeping the plants out of doors (as is commonly practiced) during heavy autumn rains and great extremes of temperature, for which this country is remarkable. Yet, strange to say, many of our best amateurs and gardeners have hitherto failed in ascertaining the cause of this defect, and will not be unfrequently heard to express a surprise at what caused it. All that is required to obviate this evil, is to remove the plants to their winter quarters (or at least under glass) before the heavy autumnal rains set in, as the days are then generally hot, it is necessary that the plants should be shaded from the mid-day sun. If the foregoing precautions, careful watering, judicious ventilation, and good drainage is attended to, this long-complained-of difficulty will soon disappear.

Your readers will perhaps recollect that I have always endeavored to impress the necessity of air as well as an adjustment of light as not only essential but indispensible to all plants under glass, a subject on which there is little or no difference of opinion among practical men, with the solitary exception of Mr. Leuchars, one of the correspondents of this journal, who has broached a doctrine hitherto unprecedented in horticultural records. He was not satisfied with thus infringing on the simple but wise lessons that nature teaches us, but has designated all European gardeners in this country, (with "a few honorable exceptions") as imposters, deceivers, quacks.

As a British gardener, I am particularly acquainted with many of the profession from every part of the British Islands, several of which are now in this country. In justice to them, I must so far deviate from Mr. Leuchar's opinion, that I believe them a credit both to their profession and their country. I perfectly agree with Mr. Meehan's remarks as to the injury that such wholesale statements are calculated to inflict on European gardeners.

Who can read the leading article of the same number, where you establish the taste and ability of European (particularly British) gardeners every where, in the following words: "So completely is this true, that wherever on the continent one finds a garden conspicuous for the taste of its design, one is certain to learn that it is laid out in the English style, and usually kept by an English Gardener;" what conclusion I ask can your readers arrive at, but that Mr. Leuchars, who wishes to teach the American people, knows nothing of the gardening of the most refined nation.

Let us next take a retrospective view of Mr. Leuchars' practice, and see if the many calumnies he so liberally heaps upon us poor foreign gardeners, will not retaliate on himself. In his first article, he tells us that he keeps his plant house shut in the day, throwing water on the floor, on the flues, and on every available surface, and throwing them open at night.

Now, the following is the practice in European gardens: In hot weather, during the summer months, the plants are watered and syringed, if required, after 4 o'clock in the evenings, and in some places, where the families recreate themselves in the evening in carefully studying the natural productions of foreign climes, as grouped in their pleasure grounds, or congregated within the limits of a small house, the walks are kept perfectly dry. Should other work interfere with this routine, it is done the first thing the next morning, the passages, &c. dried as before, so that it will be found ready for the family or visitors at all times. In the winter months, when the days are short, the weather cold and damp, and vegetation partly arrested, this business of watering is performed in the forenoon. Drying walks, &c., as directed for the summer months, always giving air when the weather permits. Under this treatment, a lady with the thin-

nest shoe can enjoy the conservatory, with as little danger of wet feet as in a drawing-room; and breathing as pure an atmosphere as in the open air. How different from Mr. LEUCHARS' treatment, where a person must necessarily be near their ankles in water, and in a suffocating atmosphere near the point of saturation. It is not unfrequent to see those "Honorable exceptions" when failing to fulfil the duties of their station, to ascribe their insurmountable difficulties to some extraordinary phenomena, or some irremediable cause, and in the end, make a great fuss about nothing. I see no more difficulty in the summer management of green-houses under the bright sun of North America, (with proper blinds and ventilation) than in the cool climate of Britain.

In his second letter, (summer treatment of plants) he objects to evening watering, because he says it cools the surface excessively, and chills the roots of plants. He prefers the early part of the morning for watering all plants out of doors, and about noon to water those in the houses. By treating these particulars in a philosophical point of view, your readers will be better able to judge of his scientific principles. Where, in any quarter of the globe, whether in the frigid, temperate or torrid zones, has nature excluded a plant from the wholesome breezes of day, as Mr. LEUCHARS has done? 'Tis with the combined action of light and air, that plants will harden their texture. If kept in a high temperature and damp atmosphere without air, their wood is soft and of a pale colour from the superabundance of indigested sap. Neither will the night air restore the plants to their usual greenness, for the carbonic acid and water which has been absorbed by the leaves and by the roots, ceases to be decomposed on the departure of light. The plants during the night re-absorb oxygen from the atmosphere, and re-combine it with the matter they contain, to be again liberated at the return of light. And Dr. LINDLEY observes that no plants can long exist in which this alternate action is prevented, unless perhaps fungals and brown parasites.

Mr. LEUCHARS' objection to evening watering, is the cooling of the surface excessively, and chilling the roots of the plants; but I cannot perceive how his early morning and mid-day watering can better his condition. I submit it to the consideration of your readers, that water when exposed to the sun and air during the day, will be better applied after 4 o'clock in the evening than at any other time; for then the heat of the sun's rays is decreasing, and the temperature of the soil may be a little modified also; nor do I think there is any great difference betwixt the morning and evening temperature of the soil, in our warm summer months, whilst that of the water must be decidedly great, as is obvious from the water being nine or ten hours without the influence of the sun's rays.

I think reason and science justify the practice of evening watering, not as Mr. LEUCHARS insinuated that the majority of people, by a sort of general consent, adhere to it without having any well determined notions whether it is right or wrong; but each person taking the example of his neighbor as a very good reason why he should do it himself. Now the great advantage of evening watering and syringing, and the reason why it should be adhered to in summer, is already given, but which I might for further elucidation, reassert here—it is simply that the oxygen the plants absorbed the previous night was restored to the atmosphere during the day. Therefore, water applied in the evening, whether to the roots, to the leaves, or surrounding surface, will increase the quantity of oxygen to be re-absorbed during the night, and again liberated with the return of light.

With the exception of those passages to which I have particularly alluded, Mr. LEUCHARS' letters are worthy the attention of every American reader, and I hope he will in future devote his talents to some subject more advantageous to the community, than villifying European gardeners in this country. I remain sir, respectfully yours, *M. C. Williamsburgh, N. Y., Nov.*, 1849.

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DRIED PIE-PLANT.—*A. J. Downing, Esq. Dear Sir:* A very respectable colored man of this place, MANSFIELD HERBERT, called on me a few days since, and stated that he had been in the habit of raising Rhubarb plant for sale; but that having lost his market last summer in consequence of the prevalence of cholera, he had tried the experiment of drying it for winter use. In this he considered he had been entirely successful; and he brought me samples both of the dried plant and the pie made with it.

He thinks it a new thing and considers it quite important, both for those who have a particular relish for that kind of pies, and for ships going to sea on long voyages.

It is new to me, but perhaps may not be so to you. However, at my suggestion, he has sent you the specimens contained in the accompanying box. He recommends that the plant be cut into small pieces and put into water over night. In the morning, drain off the water in which they have been soaked and they are ready for use. Yours, respectfully, *Wm. P. Sherman. Trenton, N. J., Nov.* 18, 1849.

[We have tried the dried Rhubarb stalks (which came very nicely preserved and packed in a box,) and having put them to trial, can bear testimony to their making an excellent tart. ED.]

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WARMING AND VENTILATING.—We have had several letters lately asking advice as to the best mode of warming and ventilating houses—a most important matter, but little understood in this country.

We have prepared some remarks on this subject in our work on *Country Houses*, now going through the press. In the mean time, we recommend those who wish immediately to set about warming

and ventilating, houses, churches, or public buildings of any kind, in the most complete method yet known to us, to call at the warehouse of Messrs. CHILSON, ALLEN, WALKER & Co., 351 Broadway, New-York, or CHILSON, DUNKLEE & Co., 53 Blackstone street, Boston, where they will see Emerson's patent ventilating apparatus, and Chilson's furnace, the merits of which have been fully proved in all the public schools, and a great number of private houses in Boston, and which are such as must bring them into general use. Information regarding the process of warming and ventilation will be cheerfully given at these warehouses, to all persons interested in the subject.

The Boston School-Ventilating stove may also be seen at these warehouses. It is the only coal stove we have ever seen that does not vitiate the atmosphere—and as it has an air chamber connected by an air-duct passing under the bottom of the stove (through the floor,) to the open air, a volume of pure fresh air is constantly brought into the apartment while it is being warmed. This stove appears to us to be perfectly suited for warming small green-houses or plant cabinets, as the Polmaise mode of heating, (the most perfect of all methods for the health of plants,) may be effected by this stove in the easiest possible manner. We shall give a cut of this stove and some particulars hereafter.

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ROSE CUTTINGS.—A friend of mine thinks he is in possession of a great secret with regard to raising roses from the slip or cutting. His plan is to stick the cutting about an inch deep into *clean* river sand, (if it is not clean to work it clean,) and as soon as the rootlets are formed, to place them in suitably prepared soil, or let the soil be beneath the sand at the right depth for the roots to strike into—say an inch or perhaps a little more. He says he does not loose one in twenty. The sand, which of course is kept moist, prevents the wood from rotting. My brother, Dr. C. E. M. has succeeded in this way, when every other experiment has failed. [This method, which we have practiced years ago, is an excellent one. ED.] *J. R. M. Chalk Level, Va., Nov.* 10, 1849.

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FINE INDIGENOUS PLUM.—*A. J. Downing, Esq. Dear Sir:* I herewith enclose you some plum seed that I found in a wild state on a small creek near this place, some few years since, and introduced it to my garden. It is superior to any plum I have ever seen for preserving. It is purple, and covered with a rich bloom, and is very handsome, much more so than the Dawson. It has improved much by cultivation, is a never-failing bearer; a low spreading tree of rather slow growth; mine has never been injured by frost or curculio: has borne for seven years in my garden. This year, one tree had about two bushels on it. I never have found it growing except at one place in this state. I think you will be highly pleased with it, and it will be a great acquisition to your fine assortment of fruit. I think it superior to the Dawson or Frost Gage, as a preserving plum, which has induced me to send the seed to you, knowing that you were fond of something rare and new. Respectfully, yours, &c., *A. A. Cleaveland. Washington, Wilkes Co. Ga., November* 2, 1849.

[Many thanks. We think from the appearance of the plum-stones, the species is one not at all known here, and we will gladly give it a trial. Ed.]

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MCLAUGHLIN PLUM—We have organised a horticultural society in Bangor, and had our first exhibition on the 13th and 14th of September. The display of fruits was really imposing for the first effort, and more especially that of plums, having on our tables most of the varieties noticed in your work on "fruit and fruit trees." For beauty, large size and fine flavor, none attracted more attention than the *McLaughlin* plum, a native of Bangor. The committee on fruits decided it was superior to any other plum on our tables, with the single exception of the Green Gage. B. F. NOURSE, Esq., of our society, sent a box of the McLaughlin plums to the Massachusetts Hort. Society, and President Walker informs me that their society also came to the same decision. Respectfully, *Henry Little. Bangor, Me., Sept.*, 1849. [The foregoing was sent us some time ago, but was accidentally mislaid. The McLaughlin plum is spoken of by all eastern pomologists as a great acquisition to this class of fruits—of the *best* quality as regards flavor and appearance, and remarkably hardy and productive. ED.]

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TREES IN TOWNS AND VILLAGES.—We marked the following for insertion some time ago, but it has been delayed—though not too late, for it is never too late to urge the advantage of embellishing rural villages with shade trees. It is the report of the Rockingham Farmers' Club, Exeter, N. H.—and is worthy of being "printed in gold" and hung up in every village in the country—where it would be a *capital* kind of punishment, to hang up in like manner all who are not induced by it to become tree planters. ED.

As to the failure of success in planting trees, we have something to say.—So long as it is true, that by far the greater part of the trees set by the streets in our village perish in the first two years—while of those properly set and protected, not one in ten is lost, it must be evident that accurate knowledge on the subject is still wanting, and in hope of aiding to supply that want, we propose to suggest, in a practical form, our views upon the subject. And first as to

The kind of Trees.—Above all others, for the street, the *Elm* is to be preferred. For beauty, gracefulness, *grandeur* even, it has no equal in New England. Besides, it is hardy, long-lived, easily procured, and free from the attacks of insects and disease. The Rock-maple comes nex,

—a beautiful and stately tree, though somewhat precise and rigid in its outline, and of much slower growth than the Elm. It is hardy, bears transplanting well, affords an impenetrable shade, and alternating in rows with the elm, by the way side, or mingled in groups where there is room for them, it affords a beautiful and desirable variety. Neither the Red-maple nor the White-maple can be compared with the Rock-maple. They are smaller, shorter lived, less hardy, and altogether inferior to it in grace and beauty, and are recommended only where there is room for variety.

The White Ash is a tree which seems not to be appreciated, and is one of our finest trees, and for size, durability and beauty, entitled to the third place in our list.

Then we have the Bass or American Linden, not surpassed by any tree in the richness and beauty of its foliage—a tree not sufficiently hardy perhaps for the street, but, "beautiful exceedingly" in a lawn or private grounds.

The Beech is a tree deserving its classic fame, but too full of local attachments and home feelings to survive removal without great care, and the Walnut is liable to the same objection.

Where space allows, as in public squares and lawns, avoid rows and square circles, and mathematics in general, in tree-planting—avoid sameness in kind and size and shape, and endeavor to imitate the cunning hand of nature in tasteful inequality of grouping.

Time for Transplanting.—All deciduous forest trees may be removed at any time after the fall of the leaf in autumn, and before the bursting of the buds in spring. If removed in the bright warm days of spring, their roots should be carefully shaded from the sun, and in fall and winter they must not be exposed naked to severe cold.

Preparation for Setting.—For your trees upon the streets, dig the holes 6 feet in diameter and 18 inches deep *before the trees are procured ;*—replace the subsoil with good soil and procure enough more and deposite near, to fill up level with the earth, so as not to use the sand or gravel from the bottom, and have ready two pieces of joist or plank 4 inches wide, with proper strips of board for protection of the trees. Do all this at your leisure, before the trees are dug. It is the largest half of the whole operation, and should never be left to the hour when returning late, weary and heavy laden from your labor of procuring them, you will have neither time nor strength to perform it carefully and speedily, and when your poor trees, like so many fish out of water, are panting and suffering for a return to their native element.

Selection of Trees and digging up.—Procure trees from open land rather than from thick woods, if possible, and those of thick and low growth, rather than tall and slender trees, and be sure they are young and growing. It is generally advised to take them from land similar to that where they are to be set, but this is not essential. Elms from swamps and bogs, transplanted on dry lands and pine plains, are now growing all about us in Exeter. It is of more importance to take them from such soil as will allow their removal with least injury to the roots, and therefore not from land filled with stones or large roots.

Some writers insist that the trees be marked before removal, that they may be set in the same position as to the points of compass as before—and the theory is reasonable, though the practice, however it may promote their growth and comfort, is not essential to their life. They soon "get the hang" of their new position, if the theory is disregarded, while Sam Weller's reason for a father whipping his boy "it can't do any hurt if it don't do any good," may be given in support of the practice.

Having selected a tree of about three inches in diameter, with a sharp spade, an axe and a bog hoe, dig a trench about two and a-half feet from it, completely around it, deep enough to cut off every root; then dig under it till it is loosened, using no crow-bar or lever to gall and split the roots, and carefully preserving all the small roots and fibres. Load the trees when dug upon a long wagon, putting pine boughs under them to prevent rubbing, and cover the roots from the sun. About a dozen such will make a load for a horse, and three or four smart men can dig and get them home in half a day.

Trimming and Setting out.—With a fine saw, and a knife, cut off smoothly all the broken roots. *Next cut away one-half at least of the top*, either by shortening the limbs, or cutting part of them away entirely, as the shape of the tree may require. We are aware that this is disputed territory, and take the responsibility of holding it. We suppose that the sap is supplied through the roots, that in hot, dry weather, evaporation goes on rapidly from the leaves—that if that evaporation exceeds the supply of sap, the leaves wither and the tree dies.

But there are other reasons for lessening the top. The tree has grown in a sheltered position, protected from the rude "winds of Heaven"—perchance in society, resting its long arms on the shoulders of its friends and kindred—supported in the loving embrace of its companions. It has had no discipline or preparation for the cold and lonely and trying exposure of a public position. But now you have cut away its old supporters—literally *root and branch*. With its full top exposed to the tempest, the small newly formed roots which should attach it to its new position, are constantly broken off, and it cannot live. This is the cause of the failure of many attempts at transplanting. Plant the tree no deeper than it grew before. Nature who has attended to growing trees some six thousand years, understands well how they should be set, and cannot be improved upon. Drive your stakes before the roots are covered, that you may not injure them. Then having carefully placed the roots in their natural position, fill

up with finely pulverised soil and see that no space is left beneath them. When the roots are fully covered, place about half a bundle of straw or as much hay over the whole surface of the hole and cover it with soil, leaving in spring a little hollow about the tree. If you plant in the fall, make a little heap of earth about the tree, to turn off the water, and remove it the next spring. The straw will prevent the evaporation of the moisture about the roots, and keep the soil around the tree light for several years; it tends to prevent the growth of weeds and grass, and admits the free passage of rain, or water artificially applied. Do not omit this precaution; it is almost essential on sandy land.

Care after planting.—If you plant trees in a public street, do not consider the work complete, until they are protected from *animals*, as well as from motion by winds, by securing them with stakes, as before suggested. A strip of board on each of two sides of the tree, or a strip of leather put round it and attached by a wire to each stake, will protect it sufficiently against the racking of the winds, and against roving cattle, which delight to find a new tree to rub against. But we may still utter the prayer. "save us from our *friends*," for many of them seem to think that trees are principally useful as a means of *securing horses*. Trees then, near your dwellings, should be *boxed up* about seven feet high, if you do not intend to lose both your friend and your tree. He will tie his horse to your tree, and the horse, of course, will amuse himself with gnawing the bark. You will be exceedingly vexed, and possibly rude, and will be *consoled* by the assurance that he never knew his horse to do so before, and you will part, your friend grieved at the accident, and you wishing him and his horse at the —— end of their journey!

If a drouth comes in midsummer, such as those forgetful people, the *oldest inhabitants*, do not recollect to have seen, and such seasons are nothing unusual,—if then, once a week, you give the trees a copious watering, it will be an act of *generosity* which they will not forget, but if planted, according to the foregoing directions, in ordinary situations, nineteen of every twenty of them will live with only the water from the clouds to moisten them. We believe it to be not only unnecessary, but a positive injury to trees, to water them daily.

Transplanting Evergreens.—There are no trees more beautiful than the Hemlock, the White Pine, the Spruce and the Fir—trees of our own hill-sides, and yet, comparatively, but few of them are seen about our dwellings. The reason is to be found, partly in the want of a just appreciation of what is so *common*, and partly in the idea that this class of trees cannot be successfully transplanted.—This idea is entirely *erroneous*. In the month of April, 1847, 140 White Pine trees, from 5 to 8 feet high, were transplanted in Exeter, *only one* of which has died in consequence of the removal. They should be moved in the spring, before they have made any growth for the season. In the moist climate of England, the summer is said to be the best season for transplanting evergreens, but a variety of experiments have satisfied us beyond doubt, that this is not the case here. the method to be pursued is this: Select trees on the open plain, and with a spade cut down round them, leaving a circle of turf two feet or more in diameter about each tree—then lift the tree and set it upright in the wagon, with the ball of earth unbroken. At the place of planting, a hole is to be made to correspond with the ball of earth, the soil at the bottom made light and the tree set in, and with a little earth thrown on and pressed down, the work is done. Care must be taken to load the roots with stones, or by driving a short stake by each tree and confining it, that the wind does not upset it. Evergreens should not be much pruned. Their foliage is covered with a gummy substance, so that evaporation does not go on so rapidly from them as from deciduous trees, and they do not readily recover their beauty of form, if mutilated. Evergreens should be planted in groups, both for beauty, and that they may be partially shaded and sheltered. Plant then the evergreens of our own forest. In no way can bare walls be so readily screened, or the starched and blank landscape so beautifully variegated and adorned, as by setting here and there little *oases* of the White Pine and Hemlock.

Transplanting in Winter with balls of Earth.—The best of all methods of moving trees of any kind, is that suggested in the above title.—The process may be described in a few words:—Late in autumn dig a trench completely round the tree, at a distance proportioned to its size, cutting off all the roots, and dig under the tree, but not so as to loosen it; then dig away the earth on one side of the hole, so that a sled or a drag may be backed down under it; place some straw or leaves in the bottom of the trench, or cover it with boards that the bottom may not freeze too hard. Leave it until the ball of earth is frozen hard, and when there is a little snow, remove it. It will of course be necessary either to dig the hole for receiving it before the ground is frozen, or to cover the place intended for it with straw, that the hole may be made in winter. In the former case, a few loads of soil with which to fill up, may be kept in a barn cellar, or otherwise protected from frost. Great care should be taken to fill compactly every crevice about the ball in setting, and it is well to confine the trees to an upright position, by *braces*, from the ground against the lower limbs, or by other means, that it may not *lean* when the frost comes out of the ground in spring. By this process, we have known Elm trees of 12 and 18 inches in *diameter*, and Hemlocks, 25 feet in height, removed with perfect success. Indeed, if the work is done with skill and care, the tree on *awaking* in spring, will scarcely know that it has changed its place, and will soon become entirely reconciled to its new position. In this mode little

pruning is necessary, and most of the top may be saved, as the greater part of the *roots* may be preserved.

The weight of an Elm tree a foot in diameter, with a ball of earth 6 feet across and 18 inches in thickness would be probably five or six tons, in order to execute the work properly, a set of ropes and pulleys would be found convenient. Trees of 6 inches in diameter, may be readily removed with a yoke of oxen, and the implements commonly at hand.

In conclusion, we would say to all, *plant trees*, let every *young* man plant trees that he may have something ever near to bring back pleasing recollections of his youth—something when he is an old man that will seem of his *own age*, and sympathise with him, and look on him with a familiar face—that he may not feel quite alone among a new generation. Let the *old* man plant trees. They will perhaps be beautiful in his own time, and entice him to remain longer where there is still something left to interest him, and where he may still be useful—and at least they will keep alive in the minds of men the memory of one who lived not for himself alone. For the Committee, H. F. French, *Chairman. Exeter, N. H., April* 4, 1849.

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Tree Violet.—I am told by every one that this plant is herbaceous, and differs little from the Double Dark Blue Violet. Now, I have always been of a different opinion; to support which, permit me to give you the following extract from Mrs. Loudon's "Flower Garden:"

"The Shrubby or Tree Violet (V. palmaensis,) a native of the Canary Isles, is a very handsome plant, growing about two feet high, with a shrubby stem and large purplish flowers. It is usually kept in a green-house in England, where it flowers from May to July."

And in Loudon's Encyclopædia of Plants, (page 1186,) it is similarly described; but with an addition, that it was discovered in 1836, by P. B. Webb, a traveller in the Canaries, &c.

Have any of your correspondents seen, or do they possess a plant answering to the above description? *M. Columbia, South Carolina.*

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ANSWERS TO CORRESPONDENTS.

Covering Half-hardy plants.—*A Tyro*, (Pittsburgh.) Always remember that what is most needful is to guard the plants against sudden changes of temperature, and above all, sudden *thawing* after frost. Therefore, shade them from the sun, either by covering them with a barrel or box (raised a few inches on the north side to admit air) or with branches of evergreens or litter. Cedar tops or branches of evergreen trees are the best and simplest covering when they are to be had, and when they are not, corn-stalks, salt hay, straw, or litter, will do instead. Bend down the long shoots of roses before covering them—and if they are climbers, leave them on the trellis, but do not bind them tightly with straw or any other covering, lest they should be *smothered*. Carnations and Tea-roses may be kept in the open border, where they grow, by covering the beds with a common board frame, partly roofed with glass, and partly with boards. Over the top throw some straw, which should be removed and the plants aired two or three times in the winter, when there is no frost. The canes of Antwerp Raspberries, in localities where they are not quite hardy, should be bent down and covered with two or three inches of soil.

Plants for Rooms.—*A Novice*. The following half dozen plants will succeed well in your windows, and bloom freely, Chinese Primrose, white and purple, Chinese Azaleas, fragrant Daphne, Laurustinus, Striped Abutilon. If you wish them to thrive well, choose a mild day once in a week or ten days, turn the pots on their sides, and thoroughly syringe the foliage, so as to cleanse the pores of the leaves. Hyacinths, in pots, give a great deal of pleasure with little trouble in winter.

Celery.—*J. F.*, (Rochester.) We suppose the great value of salt to celery, is to enable the soil to attract and hold *moisture*, which this plant especially requires. (Your letter was mislaid, or you would have had an earlier answer.)

Grapes in Frames—*Ibid.* We doubt your success with Black Hamburghs in common hot-bed frames. There would not be *atmosphere* enough for the vines. But by raising up rough frames, (say 6 feet high at the back) and using the hot-bed lights after they were no longer wanted, you may succeed at little cost in growing good grapes. See account of a frame of this kind, with cut, vol. 1, p. 270.

Ventilating Houses.—*A Subscriber*, (Waterloo, N. Y.) Emerson's Ventilator is the best yet invented, you can see this excellent means of warming in operation at 351 Broadway, N Y.

Green-houses.—*O. P. Q.*, (Bennington, Vt.) The best angle for the roof is 45° (exactly half way between a perpendicular and a horizontal line.) It should never be less than 34°, or it will both be leaky, and defective in catching the rays of the sun.

Pear Trees —*B. Johnson*, (Boston.) Your trees do not thrive because the soil is unsuitable—it has been exhausted by long cultivation. Dig in 5 or 6 shovel-fulls of pulverized bones, and a good dressing of rich manure or compost to each tree immediately, and in the spring give a supply of ashes. Cover the soil next spring with a mulching of straw or salt hay, and keep the trunks of the trees sheathed all the year with straw, if you wish to prevent the blight.

Transplanting.—*Querist*, (Roxbury, Mass.) Freezing does not hurt roots of hardy trees, if they are covered closely from the air, and kept so

till they are thawed. If you cannot get all your trees replanted before the winter commences, bury the roots in a trench, in a sheltered place, pressing the earth firmly about its roots. Here they may lie till the spring opens without injury.

Old Fruit Gardens.—*W. Smith*, (Baltimore.) The soil is probably full of the larvæ of insects. Throw it up in ridges, and leave it exposed to the frost all winter, which will destroy great numbers of them; and if you can get an opportunity in winter, level it and ridge it up again, so as to bring a fresh layer of the grubs to the action of frost.

Salt and Lime.—Old brine answers perfectly well for slaking lime to make the lime-and-salt mixture recommended last month, for decomposing leaves or peat. If a fresh brine is made, a bushel of salt may be dissolved in as much water as is necessary to take up the salt, and four bushels of fresh lime slaked with it.

*** Correspondents, who are subscribers, will receive answers to any queries through this channel, unless in special cases when otherwise requested; and all queries requiring an early answer, must be received before the middle of the month.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting of this Society, was held on Tuesday evening, November 20, 1849. The President in the chair. It was well attended with visitors who appeared highly gratified with the beauty of the exhibition. This being an occasion for awarding the premiums for Chrysanthemums, there were a number of very fine collections of this favorite flower, and many other interesting plants of rare species, among which may be particularly noticed in the President's collection—Alphelandra Giesbrechtii, displaying its numerous graceful scarlet flowers; Pitcairnia, a new species, with two spikes of flowers of the richest scarlet; Cestrum aurantiacum with beautiful flowers of an orange tint; and air plants: Zygopetalum mackayii, Gongora atropurpurea, Maxillaria picta, Cattleya, sp., etc., presenting a variety and strikingly singular inflorescence; also, Strelitzia reginæ, the Queen plant; Cypripedium insigne the beautiful Lady Slipper: Justicia carnea et coccinea, etc., and a table of Chrysanthema. In Robert Buist's display were, some dozen varieties of Chrysanthema, one half of which were entirely new, and specimens of Clerodendron fallax, Acropera flava, Epacris pallida, Erica Willmoreana, Correa multiflora rubra, etc. James Dundas' gardener exhibited, besides an extensive collection of Chrysanthema, beautiful specimens of Habrothamnus elegans, Epiphyllum truncatum, and Abutilon venosum John Lambert's gardener had a choice collection of Chrysanthema; and Andrew Dryburg a small but select collection of plants. James Ritchie a Seedling Camellia and Chrysanthemum, matricarioides bearing handsome flowers. Not the least attractive part of the exhibition consisted in the beautiful baskets of cut flowers all arranged with exquisite taste. The display was not lacking in fruits and the more substantial necessaries of life, the culinary vegetables. Of the former were seen a dish of Bananas, from the conservatory of James Dundas, very tempting; a display of Pears from the garden of Mrs. John B. Smith, of varieties Duchess d'Angouleme of large dimensions; St. Germain, Glout morceau, Holland Green; also delightfully fragrant Quinces. A very large Pear of unknown variety from Iowa, brought by Thos. H. Benton, Jr.; by Mrs. Kreider, some six or eight dishes of St. Domingo Walnut, and Green chissel Pears; of Apples, John Perkins exhibited the Roman stem, Kaigher's spitzenburg and cider varieties; Samuel Ott, the Newtown Pippin. In the very extensive display of vegetables, by Anthony Felton, were immense Cauliflowers, fine Broccoli and Celery; and among the President's and John Lambert's' were fine Brussels Sprouts and Celery; and by Edward Webber, very large Parsnips, Beets and Celery.

Premiums awarded on this occasion, were:—For the best Chrysanthemums, to Maurice Finn, gardener to John Lambert; for the second best ditto, to Ben Daniels, gardener to Caleb Cope; for the third best ditto, to Alexander Parker; For the best Seedling Chrysanthemum, to Ben Daniels; for the best three specimens of the Hot-house plants, to Ben Daniels; for the second best, to Robert Scott, foreman to Robert Buist; for the best three specimens of Green-house plants, to Robert Scott; and for the second best, to Ben Daniels; for the best collection of plants in pots, to James Bisset, gardener to James Dundas; for the second best, to Andrew Dryburg; and the third best to Ben Daniels. For the best Bouquet, to P. Barker; for the second best Bouquet, to Robert Kilvington; for the best basket of cut flowers, to Andrew Dryburgh; for the second best, to Ben Daniels. And special premiums of one dollar each to Maurice Finn and Wm. Hall, for baskets of cut flowers; and one of two dollars to James Bisset, for cut Camellias.

For the best dozen Pears, (Glout Morceau,) to Mrs. John B Smith; for the second best, (St. Germain,) to the same; for the best Apples, (Newtown Pippin,) Sam'l Ott; for the second best, (Roman Stem,) to John Perkins. And special premiums of one dollar, for five Quinces to Mrs. John B. Smith; and of two dollars for five Bananas to James Bisset.

For the best Celery, six plants to Edward Webster; for the second best, to Anthony Felton; for the best Broccoli, five heads, to Anthony Felton; for the best Brussels Sprouts, to Maurice Finn; for the second best, to Ben Daniels; for the best display of vegetables by market gardeners, to Anthony Felton; for the second best, to the same; for the best display of vegetables by Amateurs, to Ben Daniels; for the second best, to Maurice Finn; for the third best, to Edward Webster.

Mr. Hagedorn, the Bavarian Consul, presented a package of vegetable and flower seeds to the Society, and for which a vote of thanks was tendered.

Mr. J. J. Thomas presented a copy of his American Fruit Culturist, and for which a vote of thanks was ordered.

On motion, adjourned.

THO. P. JAMES,
Recording Secretary.

RUSTIC ARBOURS.

[Hort: Jan 1850]